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Anusol Suppositories contain astringent medicaments in an emollient base. They relieve rectal congestion, control hæmorrhage, allay irritation and soothe inflamed tissues. The patient's condition is improved and a healthy area prepared for operation.

Anusol Suppositories contain no anæsthetic, analgesic or narcotic drugs. Therefore, while the operation is pending, symptoms cannot be overlooked although pain is relieved by the reduction of local pressure.

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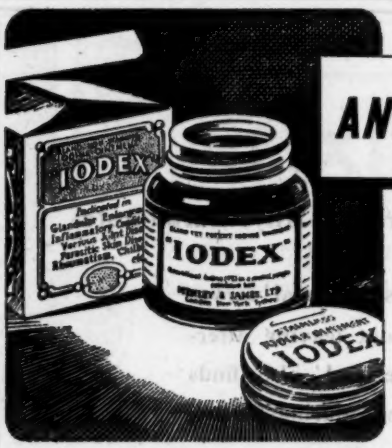

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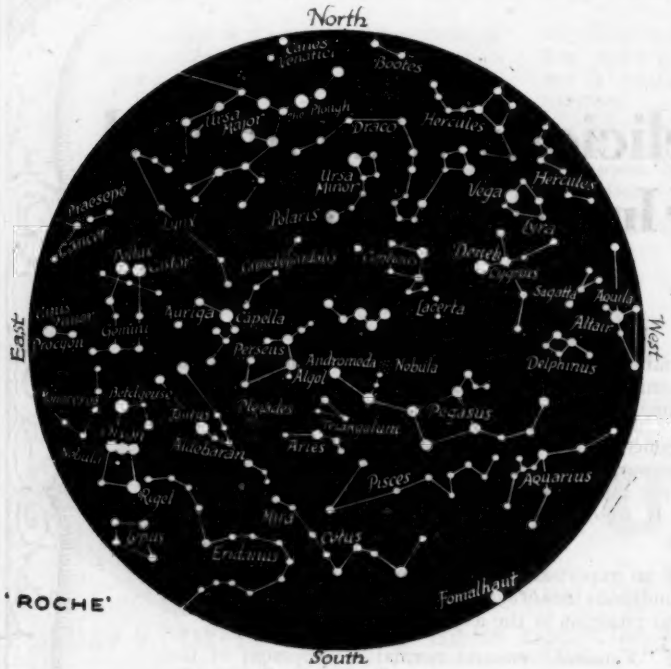
ASTRONOMICAL CHART (*Northern Hemisphere*)



NOVEMBER

The Moon

The first quarter of the moon appears on November 5th, the full being reached in the early hours of the 12th. On the night of the 13th it is fairly near to Mars, and to Saturn on the evening of the 14th. Last quarter is November 19th, and the waning moon is near to Venus in the mornings of the 23rd and 24th. New moon appears on November 27th.

The Planets

Mercury is a morning star until the 10th, when it passes through superior conjunction to become an evening object. Venus is a brilliant star in the morning sky, rising four and a half hours before the sun during the whole month, remaining for most part a hundred times brighter than a star of first magnitude. Mars moving westward in Taurus is a morning star, and by the end of the month its brightness will be greater than that of Sirius. Jupiter is a morning star moving slowly eastward near the bright star Regulus.

The chart shows the brighter stars above the horizon in the latitude of London at 11 o'clock at the beginning of the month and 9 o'clock at the end (G.M.T.).

No warmth, no cheerfulness, no healthful ease—
No comfortable feel in any member—
No shade, no shine, no butterflies, no bees,
No fruits, no flowers, no birds, no leaves,
No-vember!
—HOOD (1844)

If November be the month of negations, it would be possible, in this the fifth winter of the World War, to add others associated with anxiety and long hours of work under cheerless conditions, no sleep for instance, or little of it. Hot drinks for cold nights have a psychological as well as a warming effect, and where a simple sedative to encourage sleep is also indicated 'Sedobrol' Sedative Bouillon is effective. Taken under medical direction, a three weeks' course of 'Sedobrol' gives gratifying results in stubborn cases.

'Sedobrol'
SEDATIVE BOUILLON

Each cube contains sodium bromide 17 grs. in a concentrated vegetable extract which dissolves instantly in hot water. No milk or sugar is required. Issued in tins of 10 to 30 Tablets. Sample on request to members of the medical profession.

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Gold was first used (by primitive peoples who knew no better) for its intrinsic value as a metal in the fashioning of weapons and domestic utensils. Iron and copper proved superior for these purposes and gold then became a mere ornament and later still a standard of currency—and an alternative to work. Lease-lend has almost completed the process of rendering gold redundant. The full cycle has almost turned to the utilitarian application of gold (by civilised people who now know better), a notable example being the administration of gold salts in the treatment of rheumatoid arthritis.

'Myocrisin' brand sodium aurothiomalate has a definite place in the relief of the crippling symptoms of rheumatoid arthritis. Our Medical Information Department will be glad to supply you, on request, with a comprehensive booklet describing its use in this condition.

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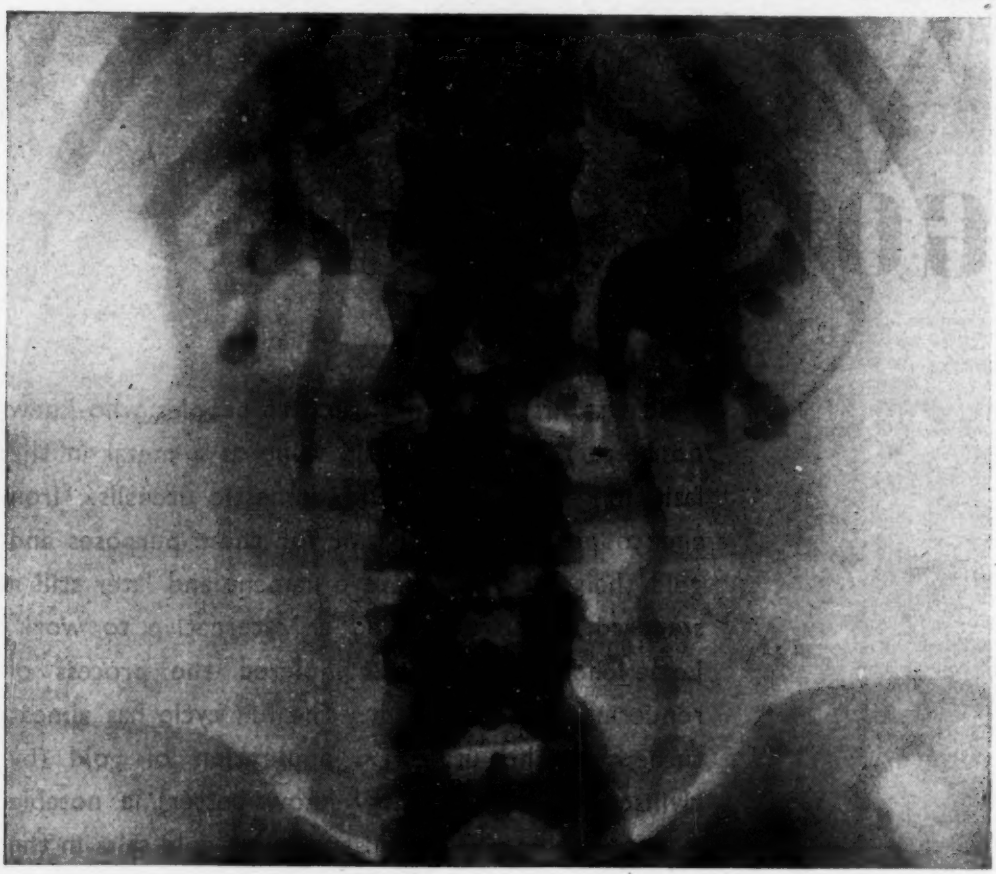

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The original arsenoxide product for the treatment of syphilis, introduced after co-operative research in two American universities and the Research Department of Parke, Davis & Co.

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SOME SIGNIFICANT DATES in the ARSENICAL TREATMENT of SYPHILIS

1902	Laveran and Mesnil discover that sodium arsenite has an effect in experimental trypanosomiasis in mice.
1907	Atoxyl—elaborated by Bechamp in 1863—first used in syphilis by Lassar.
1909	Salvarsan, or "606," later known as "arsphenamine," used experimentally by Hata in the treatment of spirillosis in fowls.
1910	Arsphenamine given clinical trial in syphilis by various workers.
1912	Ehrlich and his colleagues produce neo-arsphenamine, having previously discarded arsenoxide as too toxic.
1920	Voegtlin and Smith suggest that the parasiticidal action of the arsphenamines is due to their conversion in the body into arsenoxide.
1923	Dale envisages the possibility of arsenoxide being used by continuous intravenous-drip therapy.
1932	Hamilton produces for Tatum and Cooper an improved arsenoxide (Mapharside).
1935	Foerster and his associates confirm the value of 'Mapharside' in clinical trials. 'Mapharside' is introduced to the medical profession in America.
1936	'Mapharside' is introduced to the medical profession of Great Britain at the Annual Meeting of the British Medical Association at Oxford.
1936 to 1943	The superiority of 'Mapharside' over the arsphenamines is admitted by an ever-increasing number of experienced venereologists. It is adopted for the routine treatment of syphilis by the U.S.A. and Canadian Medical Services and the British Navy.

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for the prevention and treatment of COLDS

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Successful in 80% of cases

For existing colds, Serocalcin provides an effective treatment, usually clearing attacks within three days. In this case the dose is three tablets three times daily.

SEROCALCIN PREVENTS COLDS

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THE PHYSICIAN IN WAR
IN HARVEY'S TIME AND AFTER[1]

W. E. HUME, CMG, MD CAMB, FRCP
EMERITUS PROFESSOR OF MEDICINE, UNIVERSITY OF DURHAM; PHYSICIAN, GENERAL HOSPITAL, NEWCASTLE-ON-TYNE; HON. COLONEL RAMC TA (50TH DIV.)

BORN in the reign of Elizabeth, in 1578, 10 years old at the time of the Spanish Armada, Harvey was a spectator of English history until within 15 months of the death of Oliver Cromwell (Sept. 3, 1658). As physician to Charles I—appointed in 1630—he was brought face to face with war, and we know that he was present at the battle of Edgehill. There is no record that he attended the wounded on any field of battle, but he was interested in the case of Adrian Scrope who received 19 wounds at Edgehill, recovered, and lived 13 more years. Both in his journeys to the North and during any battle at which he was present Charles I had physicians attached to him and his Court, of whom Harvey was one. This militant period of Harvey's life seems a fitting reason for commemorating today the work of physicians in war in Harvey's time and after it, when so many of our College are engrossed in duties in the various Services at home and abroad.

Before the outbreak of the Civil War the vacillating King went to Scotland on four occasions (1633, 1639, 1641 and 1646) and it is certain that Harvey accompanied him on the first three (Terry) Thus in 1633 Harvey applied for leave of absence from St. Bartholomew's Hospital to accompany the King when he was crowned at Holyrood on June 18, 1633. After an interval of 6 years Harvey again accompanied Charles when he went north to mobilise his forces against the Scots. In February, 1639, a Scottish army under Alexander Leslie was massing on the border near Berwick and towards the end of April Charles reached Durham. We can presume that Harvey attended divine worship with the royal party in Durham Cathedral on Sunday, May 5, 1639, when Bishop Morton preached from the appropriate text: "Let every soul be subject to the higher powers." Charles remained in Newcastle till May 23, collecting and reviewing his motley troops, and reached Berwick on May 24, 1639. The "Pacification of Berwick" was completed on June 24, 1639, without a shot being fired; as one critic contemptuously expressed it "I never heard so much as one louse killed by either Army." Mr. William Angus sends me from HM General Register House, Edinburgh, a copy of an entry in the printed calendar of State papers, Domestic, 1639 which runs as follows:

"1639, July 10th Berwick. Richard Jannsey to Richard Harvey. My master commanded me to send two of his trunks with Lord Newport's goods by reason of his longer stay here, I fetched them from thence, and have sent them by sea with the Lord General's goods. . . .

P.S.—Dr. Beten (Bethune) is buried this day, and Dr. Harvey is in his place, and Dr. Johnson has Harvey's place."

The King was accompanied by more than one physician and Dr. Bethune had been senior to Harvey.

The Short Parliament was dissolved in May, 1640, and this was followed by the Scottish invasion of Northumberland. On Aug. 28, 1640, the battle of Newburn was fought, the English were defeated and the Scots invaded Northumberland and Durham. It has been hinted (Power 1897, Willis 1878a) that Harvey may have been present at the battle of Newburn but this is extremely unlikely since Charles himself was in York at that moment.

The next year Harvey went north for the third time. In August, 1641, Charles made terms with the Scots and on Aug. 13, 1641, he reached Newcastle on his way to Edinburgh to obtain Scottish support against the English Parliament. There seems no doubt that Harvey was with him on this occasion, because during the stay of the Royal party in Edinburgh Harvey visited and received the freedom of Aberdeen on Aug. 30, 1641.

IN CIVIL WAR

In November, 1641, Parliament under Pym's guidance proceeded to formulate the Grand Remonstrance, and the Civil War began on Aug. 22, 1642, when Charles raised his standard at Nottingham. From now onwards the details of Harvey's career are better known and the circumstances surrounding his presence at the indecisive battle of Edgehill on Oct. 23, 1642, have been often referred to.

Harvey was now 64 years old and was probably relieved and happy to settle in Oxford, when Charles and his troops fell back to that city after the battle of Edgehill. His attendance on the Queen, his daily observations on the growth of the chick with Dr. Bathurst, and his Wardenship of Merton College are well known. After leaving Oxford he returned to London as the guest of one or other of his brothers. When Dr. Ent visited him at Christmas in 1650 to obtain permission to publish his papers on generation, and asking him if all were well with him, Harvey replied:

"How can that be when the State is so agitated by storms, and I myself am yet in the open sea? . . . And indeed," he added, "were not my mind solaced by my studies, and the recollection of the observations I have formerly made, there is nothing which should make me desirous of a longer continuance. But thus employed, this obscure life and vacation from public cares, which disquiet other minds, is the medicine of mine."

At this moment we too find ourselves "in the open sea."

Though Harvey himself played little active part in the care of the sick and wounded he must have been aware of any plans for their reception and treatment. These were matters which Charles must have discussed with Harvey as we know that the King took an humane interest in the disposal and treatment of the wounded on both sides. We would have expected also that Harvey must have observed facts of interest to him connected with bleeding in wounds.

Up to the 18th century the physician's rôle in war, as in the case of Harvey, was confined to his duties as personal physician to Royalty or to a commander in the field. It has been truly stated that "the 17th century was an age of extraordinary activity in science, art and literature; while the practice of medicine, hospital management and organised care of the sick and wounded sank to a very low level" (Garrison 1922). During Elizabethan and early Stuart times the unit of military organisation was the company, and the captain of the company was expected to provide his own surgeon and the necessary equipment—though the captains often failed in their duty or appointed very unsuitable surgeons.

In the Civil War (1642–51) there was a great shortage of army doctors on both sides. At the outbreak the Royalist party obtained the services of medical officers more easily than the Roundheads, but as the war proceeded the Parliamentarians, controlling the government and the treasury, were better served. On both sides much of the medical care of the sick and wounded devolved on the local practitioners (Firth 1902).

The military surgeons were treated as non-combatants and wore a distinguishing badge. "Surgeons," says an Elizabethan author, "must wear their baldric, whereby they may be known in time of slaughter: it is their charter in the field." After a battle the collection and treatment of the wounded was haphazard and casual. A victorious general ordered or allowed the people of the countryside to carry away the wounded left behind by the conquered. Officers were borne away to neighbouring country houses where the lady of the house might have some skill in the dressing of wounds. Mrs. Hutchinson, wife of the Parliamentary governor of Nottingham, bound up the wounds of Royalist prisoners as well as Parliamentarians, doing "what she thought was her duty to them, as fellow creatures, not as enemies," even though Captain Palmer, a Parliamentarian, came in and told her "his soul abhorred to see this favour to the enemies of God" (Hutchinson 1846).

In 1645 Parliament reorganised its forces and each army had a physician-general, a surgeon-general and an apothecary-general.

After the Civil War (1651) there were consecutive appointments as physician-general to the army, whose chief duty was to select physicians for service in the army; and in war-time he was often made personal physician to the commander-in-chief in the field. On

1. Extracts from the Harveian Oration delivered before the Royal College of Physicians of London on Oct. 18, 1943.

the field of battle it is probable that the organisation for the care of the sick and wounded was in the hands of the surgeon-general and that the work of the physician-general was limited to the hospital.

PIONEERS OF MILITARY MEDICINE

At the beginning of the 18th century England was allied with Holland against the French in the war of the Spanish Succession (1701–13). The English forces numbered about 40,000 : poverty and impressment were the chief recruiting agents. In the great battles of that period (Blenheim 1704, Ramillies 1706, Oudenarde 1708, Malplaquet 1709) Marlborough's personal care of the sick and wounded stands out more prominently than the individual work of any particular physician. Before the action of Blenheim (1704) " he took pains to have the surgeons shown the exact places of assemblage and care of the wounded," and after the victory he wrote to Godolphin " I have been so employed about our own wounded men and prisoners that I had not had one hour's quiet " (Garrison 1922).

The real pioneers of English military medicine arose in the war of the Austrian Succession (1740–48) in the persons of Pringle, Brocklesby, Donald Munro and George Cleghorn, of whom the most outstanding figure was Sir John Pringle (Munk 1878b).

Taking his doctor's degree in Leyden in 1730 and after a period of study in Paris, Pringle was made professor of pneumatics and moral philosophy at Edinburgh University (1734). The Earl of Stair, appointed to command the British troops in Flanders, took Pringle with him as his private physician and made him physician to the military hospital there. Pringle was at the battle of Dettingen on July 27, 1743, and is given the credit of suggesting to the Earl that hospitals should be respected and protected by the opposing forces. The Earl wrote to the Duc de Noailles requesting his acquiescence in this suggestion. The Duc readily agreed and immediately gave practical effect to his promise by going out of his way to avoid disturbance or damage to the British hospital stationed at Feckenheim. This episode has recently been referred to by Lord Amulree (1943).

When the Earl of Stair returned to England the Duke of Cumberland persuaded Pringle to remain in Flanders and made him physician-general to the forces and physician to the royal hospitals. Pringle returned to England when the Duke was recalled to lead the forces against the Jacobites in 1745, and he remained with that Army to the battle of Culloden (April 16, 1746). He then returned to the continent and remained in Dutch Brabant until the treaty of Aix la Chapelle (1748) brought hostilities to an end.

Settling in London practice in 1749 he became physician to the Duke of Cumberland and remained in the Army as a director of, and physician to, Chelsea Hospital. In 1750 he published his *Observations on the nature and cure of hospital and jayl fevers* in which he showed that the common fever was typhus and that it was the same in both hospital and gaol.

In 1752 he published *Observations on the Diseases of the Army* (Pringle 1812) which established his claim to be the father of modern military hygiene and medicine. In the preface he makes this remark :

> " This branch of medicine, which ought long ago to have been complete, seemèd to be still in a manner new : so little is a military life consistent with that state of tranquillity requisite for study and observation."

In this work he gave his medical experiences of the campaigns in Flanders (1742–45), in Great Britain (1745–46) and in Dutch Brabant (1746–47–48). He had studied the atmospheric and seasonal conditions in each locality. He demonstrated the better health of troops situated in camps on high ground as opposed to low marshy ground, and that the upper stories of houses were more healthy than the lower. He attributed much of the ill health of soldiers and the causes of disease to such factors as foul air from marshes, decaying vegetable matter and soiling of the ground with animal excreta. He preached against overcrowding in barracks, hospitals, gaols, and ships and showed by statistics the importance of air space. Under suitable conditions he advocated the ventilating system invented by the Rev. Stephen Hales, the ingenious rector of Teddington, with whose experiments on arterial and venous pressure we are more familiar. Pringle thought that all men should contribute to, or be compelled to feed in a mess, in order to ensure sufficient and suitable food, as the soldier was apt to spend on drink in one day what ought to keep him in food for one week. He was the first to make a serious attempt to discriminate between the various fevers, though he thought one type of fever might develop into another. He recommended improvements in bedding, clothes, blankets, shoes and advocated plenty of warmth and fuel. He advised recreations and diversions for the soldier in training. He pointed out that dysentery and fevers often appear together in the same season.

Pringle became a licentiate of the college in 1758 and was elected a Fellow in 1763 : nominated Censor in 1770 he declined to act and paid the statutory fine. In the Royal Society he played a distinguished part : elected a Fellow in 1745, he was awarded the Copley medal for his experiments on septic and aseptic substances, an account of which is included in his *Observations on the diseases of the Army*. In 1772 he was elected President (1772–78) and was in the habit of discoursing on the subjects for which the Copley medal was annually awarded, " displaying a breadth of knowledge and depth of learning which greatly impressed his contemporaries." He was an intimate friend of Captain Cook and it must have given Pringle immense satisfaction to award the Copley medal to the explorer (in absentia) for his account of the means by which he kept his crews free from scurvy. He died of an apoplexy in 1782, aged 75 years.

During the same period of the 18th century medical reformers arose in the Navy. The accounts of Anson's and other voyages of that time leave little doubt that Smollett's gruesome description of life at sea in *Roderick Random* was no exaggeration. " I was much less surprised that people should die on board, than that any sick person should recover." Fortunately there appeared in the Navy three physicians who did much to improve the unhappy lot of the seamen—Lind, Blane and Trotter. Thomas Trotter said " the Army of the country could boast of a Pringle, Cleghorn, Munro and some others who have written since the last war, but the name of Lind stands alone in the Navy."

THE FATHER OF THE RAMC

Between 1793 and the battle of Waterloo (1815) England sent expeditionary forces to meet Napoleon on the continent and in Egypt. The military life of Sir James McGrigor (1861) began at this eventful period. His autobiography covers his life from the time of his joining the Army in 1793 up to his appointment as director-general in 1815—twenty-two years. For eleven years he was the medical officer to the 88th Regiment which became the Connaught Rangers, and saw service with them in Jersey, Holland, the West Indies, India and Egypt. He was continually fighting typhus fever and from his earliest service the sick quarters under his charge were always cleanly, when often the living quarters of the regiment were filthy. He kept notes of all his cases during the five months' voyage to India and presented to the Bombay Medical Society in 1801 *A memoir on the health of the 88th and other regiments from June 1800 to May 1801*. When peace was signed McGrigor returned to England and was transferred to the Royal Horse Guards at Windsor. There he found a small cramped military hospital, rampant with typhus and hospital gangrene. He obtained a larger and more roomy building and " by moving the men from one ward to another, changing the atmosphere and destroying all the sponges used in dressing, together with other precautions he finally got rid of the disease."

In 1805 he was made a deputy inspector-general of hospitals, and served in the Northern Command before being appointed by the Duke of Cumberland to the more important South-Western Command. He made full use of his powers of organisation in both Commands, inspiring all the officers under his charge with his clinical zeal ; with their willing coöperation he collected valuable statistics. He was sent to Walcheren in 1809 where the British camping grounds were under water and three thousand men were sick with malaria. He commandeered from an American vessel a supply of " the bark " which was lamentably short.

Towards the end of 1811 he was appointed chief of the medical staff under Lord Wellington in the Peninsula and he arrived in Lisbon on Jan. 10, 1812. He was

engaged in all the battles and sieges from Ciudad Rodrigo to Toulouse. He soon gained the confidence of Lord Wellington and was ordered to wait on him daily after breakfast, together with the adjutant-general, the quartermaster-general, and the commissary-general, to present a report on the number of sick and wounded with all the details of their disposal. When the Army eventually advanced against Vittoria the efficiency of the medical services had provided Wellington with some 4000–5000 men whom he thought would have been lost to him from ill health—and a distinguished person said "that he thought the extraordinary exertions of the medical officers of the Army might be said to have decided the day at Vittoria."

When Wellington was writing his despatch to the Earl of Liverpool after the capture of Badajoz, McGrigor entered the room with his report and finding the Commander-in-Chief in excellent spirits requested that the work of the medical officers should be noticed. Though Wellington had completed his despatch he made this addition:—

Camp at Badajoz, 8th April, 1812.

MY LORD,—It gives me great pleasure to inform your Lordship that our numerous wounded officers and soldiers are doing well.

I have had great reason to be satisfied with the attention paid to them by Mr. McGrigor, the Inspector-General of Hospitals, and the medical gentlemen under his direction and I trust that the loss to the service upon this occasion, will not eventually be great.

I have the honour to be, &c.,

WELLINGTON.

This was the first time that the work of medical officers had been mentioned in a despatch and publicly acknowledged. The example was followed later by the Navy.

The downfall of Napoleon enabled McGrigor to visit Paris and other towns to inspect the French system of dealing with their sick and wounded, but the only features which impressed him were the ambulances. After the peace he retired with a pension of £3 a day and a knighthood, but he was recalled to the Army as director-general, and settled down to elaborate plans for the improvement of the Army medical service.

By his frequent contact and correspondence with medical officers of all ranks he brought about a new spirit of interest and keenness on their work. He was mindful of the hardships of soldiers' widows and children, and in 1816 founded the Army Medical Friendly Society which provided annuities for widows of fallen officers, an insurance agency whose capital had grown to £80,000 when he retired in 1851. He also founded, in 1820, the Medical Benevolent Society and had collected £15,000 at the date of his retirement.

He died in London in 1858, aged 87. A humane man and a great administrator, McGrigor is rightly regarded as the father of the RAMC. Wellington said of him "He is one of the most industrious and successful public servants I have ever met with."

PRELUDE TO MODERN WAR

"The Crimean War . . . taught us the futility of trying to conduct a war at a distance from home with inefficient personnel and at the same time attempting to control and hamper the conduct of medical officers in the battle area by orders from the central government, who could only have an academic knowledge of the conditions in the actual theatre of war" (Garrison 1922b).

The British entered the war, with only 40 ambulance wagons, a pack mule and 10 litters for each regiment, no winter clothing, no shelter tents and a worthless corps of male nurses commandeered from the line." The suffering troops were eventually housed in wooden huts with adequate creature comforts, and Florence Nightingale went out with a corps of trained nurses. By these means the mortality of the British went down, though that of the French went up since they were still under canvas during the severe winter of 1855–56. The losses per thousand from disease were the highest in history; the diseases being cholera, typhus, dysentery and scurvy.

In the South African War (1899–1902) the losses by sickness far exceeded those caused by shot and shell. About half a million men were employed, with an average strength of approximately 200,000, and the annual ratio of admissions to hospital per 1000 troops was 34 for wounds and 843 for sickness. There were 59,750 cases of enteric fever, with 8227 deaths. Antityphoid inoculation based on the work of Sir Almroth Wright was still in the experimental stage and was only employed on a restricted scale. In the garrison of Ladysmith 1705 were inoculated and 10,529 were uninoculated (A. E. Wright, *Lancet*, 1902, ii, 651).

A NEW ORDER

The war of 1914–18 saw clinical physicians for the first time in war employed as medical specialists in hospitals and in a consulting capacity in armies and in the fleet. The medical organisation of the army in France as it had developed in 1918, based on a sessile type of warfare, gave opportunities for steady clinical work and investigation almost comparable to the conditions of medical practice met with at home in times of peace. Both physicians and surgeons were greatly helped in their work by the mobile laboratories, and a hospital which had attached to it an efficient radiological department and a mobile laboratory was able to do clinical work of a high order. The Medical Research Council established an active link between the work done in France and England. So we had physicians, surgeons, sanitarians, bacteriologists and radiologists working together as teams and not as individuals. Today we commemorate the work rather than the names of those who advanced the knowledge of medicine in the last war and made the lot of the sick soldier incomparably better than had been possible in any previous war. If no names are mentioned, no-one can be forgotten. In a brief review of some of the lessons of the last war it will be apparent that recent advances in medical knowledge have already solved some of the problems of that day, and the solution of many has been accomplished by the brilliant discoveries in chemotherapy.

The standard of medical work depends upon the state of medical knowledge of the day, and in the interval of 14 years between the South African and the 1914 war no branch of medicine had developed so rapidly as bacteriology. The application of this recently acquired knowledge enabled physicians to attack infections with a hope of success denied to previous generations. At the outbreak of the last war prophylactic measures were taken against smallpox and typhoid fever. In spite of vaccination against infection by the *B. typhosus* there were many cases of clinical enteric fever in France in 1914 and 1915, early proved to be infections by *B. paratyphosus A* and *B.* When a mixed vaccine (TAB) was employed from 1916 onwards the incidence of enteric cases became negligible. Certain experiences in the present war in the Middle East with Italian prisoners and British prisoners in Italian hands has shown the superiority of our antityphoid vaccination. In both wars vaccination against plague and cholera has been employed, and in this war against yellow fever when it seems advisable.

In all wars dysentery—amœbic and bacillary—have taken a heavy toll. In the last war bismuth emetine iodide was found to be highly efficacious in the treatment of amœbic dysentery and now we have in sulphaguanidine a remedy of proved value in bacillary dysentery. So also the use of the sulphonamides in the treatment of cerebrospinal meningitis has taken the sting out of a disease whose mortality was so high in the last war (35%). Malaria was one of the major problems of the last war and in Macedonia alone there were 160,000 admissions to hospital in 3 years (1916–18); today with troops even wider spread, it may become responsible for more casualties than any other single factor.

It was only fully realised towards the end of the last war how vast was the wastage from minor ailments. Statistics compiled from admissions to a group of casualty clearing stations showed that 44% of all admissions were due to such diseases as scabies, pyodermia, myalgia, rheumatism and "PUO"; 25% were cases of scabies or some forms of pyodermia, preventable by cleanliness, and the remaining 19% included trench fever, myalgia, rheumatism and PUO. In short, the greater part of a sick wastage of this magnitude was due to disease which could be prevented by personal cleanliness and simple principles of sanitation (History of the Great War (1921–23). The combined work of clinicians and bacteriologists established the entity of two new diseases: trench fever and spirochætosis icterohæmorrhagica.

The experience which physicians and surgeons gained from gunshot wounds of the chest in the war gave an impetus to the development of chest surgery in civilian

practice. Valuable contributions were made to physiology by the study of organs damaged by war injuries, and injuries of the central and peripheral nervous systems afforded opportunities of physiological as well as pathological study. Injury to peripheral nerves provided abundant material, as Weir Mitchell had found in the American Civil War. Studies of the effects of such injuries contributed more exact anatomical information of the peripheral distribution of the nerves, and threw doubt on the validity of the theory of protopathic and epicritic sensibility.

Observation of the immediate and remote effects of gunshot wounds of the spinal cord contributed to a more exact knowledge of the function of its constituent parts. Among other observations it was shown that after complete severance of the spinal cord the lower limbs might regain their tone and the knee-jerks reappear, if the general condition of the patient remained good and there was no local sepsis such as cystitis or bedsores. This return of limited function refuted Bastian's hitherto accepted law. A "mass reflex" on stimulation of the lower limbs was described in which the legs are withdrawn, the bladder evacuated, semen ejected, and sweating is intense.

Wounds of the cerebrum and cerebellum reproduced conditions comparable to experiments carried out on animals and enabled clinicians to study the functions of these areas, uncomplicated by the effects of pressure seen in the presence of tumours. By such observations light was thrown on the localisation of the visual paths, the mechanism of speech and the cortical representation of sensation (Head, Holmes et. al.).

The first serious attempt to study shock was made in the last war, and physicians, surgeons, physiologists, chemists and pathologists all contributed to it. Hæmoconcentration and the loss of circulating fluid were combated by replacement with gum-saline and tentatively with blood. Today with greater knowledge of the pitfalls of blood-matching, the use of blood, plasma and serum has become routine practice. There is still much to be learned about the clinical recognition of shock and its prevention.

The peripheral vascular disturbances caused by trench foot, shelter foot, immersion foot and frostbite have been widely studied, and improved methods of prevention and treatment have been elaborated. The study of survivors from shipwreck has brought to light the physical and mental tortures through which they have passed, and suggestions have been made to minimise the dangers to which the shipwrecked mariner is inevitably exposed in both hot and cold climates. Injuries by crushing and by blast have been sufficiently frequent in this war to enable the clinical pictures to be recognised, and experimental work is forwarding the elucidation of the physiological and pathological tissue reactions to both varieties of trauma. Aviation medicine has problems of its own because the genius of the engineer tends to outstrip the power of human adaptation to incredible altitude and speed.

Mass experiments in the psychological study of the war worker as well as of those serving in the Forces are being carried out. Problems of feeding and nutrition, of supreme importance during the war, will loom even larger after it. Harvey knew the desolation in Europe during the 30 years' war when he wrote to Lord Dorchester:—

"The miseries of the countries we have passed and the hopes of our good success and all such news your Honour hath from better hands. I can only complain, that by the way we could scarce see a dog, crow, kite, raven or any bird, or anything to anatomise, only some few miserable people, the relics of the war and the plague, where famine had made anatomies before I came. It is scarce credible in so rich, populous and plentiful countries as these were that so much misery, desolation and poverty and famine should in so short a time be, as we have seen, I interpret it well, that will be a great motive for all here to have and procure an assurance of a settled peace. It is time to leave fighting when, there is nothing to eat, nothing to be kept and gotten and the same parties rob on the other if they get but once out of sight."

History is apt to repeat itself.

In our attempts to cope with present problems and future difficulties it is only necessary for me to exhort the Fellows and Members of this College to contribute their endeavour in imitation of those benefactors whose example I have so inadequately commemorated.

Lastly, the medical profession is likely to undergo changes which will call for patience and forbearance on the part of every member of it, and the shaping of such changes will be rendered easier if we have that mutual love and affection amongst ourselves which Harvey enjoined upon us, ever remembering that *concordiâ res parvæ crescunt, discordiâ magnæ dilabuntur.*

Before the dawn of another St. Luke's day I trust that we may have the prospect of attaining that place in nature which Harvey (Willis 1878b) thought was man's destiny. "Man," says Harvey, "comes into the world naked and unarmed, as if nature had destined him for a social creature, and ordained that he should live under equitable laws and in peace; as if she had desired that he should be guided by reason rather than be driven by force."

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LOCALISED NEURITIS OF THE SHOULDER GIRDLE

A REPORT OF 46 CASES IN THE MEF

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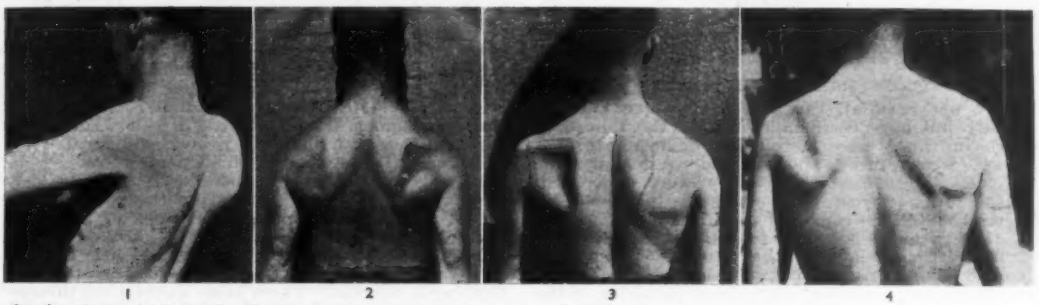
THE commonest form of neuritis in the MEF is without doubt diphtheritic polyneuritis. The high incidence of this complication with the long disability resulting has received much comment. Acute febrile polyneuritis is rare while polyneuritis following dysentery, malaria and enteric fever has been infrequent. I have not encountered any such cases, and it is interesting to recall that Walshe (1941) recorded that in 4 years with the Egyptian Expeditionary Force in 1915–19 he saw no case of true polyneuritis associated with those diseases. Fibrositis is common but the ordinary clinical forms of interstitial neuritis are not often seen in general hospitals.

TWO GROUPS

A number of cases with unusual neuritic features, however, has come to be recognised in the MEF which, as far as I have been able to ascertain, were not observed before the war in such numbers. The disability has been seen in British, Australian, New Zealand and American troops in the Middle East, and in troops in the United Kingdom. In 2½ years in one military hospital in England I saw 10 such cases. In 9 months in the Middle East I have encountered another 10, and through the courtesy of Brigadier McAlpine, lately consultant neurologist to the MEF, I have been able to study the records of some 80 cases of neuritis of the upper and lower limbs. From this experience and analysis, a fairly clear clinical picture emerged of what might be called localised neuritis of the shoulder girdle. Details of 46 patients are available. They fall into two groups.

In group 1 (26 cases) the affection of the shoulder girdle developed while the patient was in hospital with some other illness. In most cases he had reached the stage of convalescence and in all he was afebrile. A few patients had already been transferred to convalescent depot. No common factor could be detected and in all these cases evidence of faucial or cutaneous diphtheritic infection was lacking.



1 2 3 4

Case 1: winging of right scapula. Case 2: wasting of right infraspinatus. Atrophy of left infraspinatus. Atrophy of the left deltoid and spinati.

The conditions for which these patients were receiving treatment were:

Dysentery: bacillary	6	Infective hepatitis	2
amœbic	2	Tuberculous gland of neck	1
Malaria (benign tertian)	3	Typhus	1
Gunshot wounds	3	Pharyngitis	1
Local sepsis	3	Lobar pneumonia	1
Enteric fever	2	Cerebrospinal fever	1

In group 2 (20 cases) the illness began while the patient was on duty in the field. Some of these were admitted to hospital early but most were not admitted until weakness at the shoulder had developed.

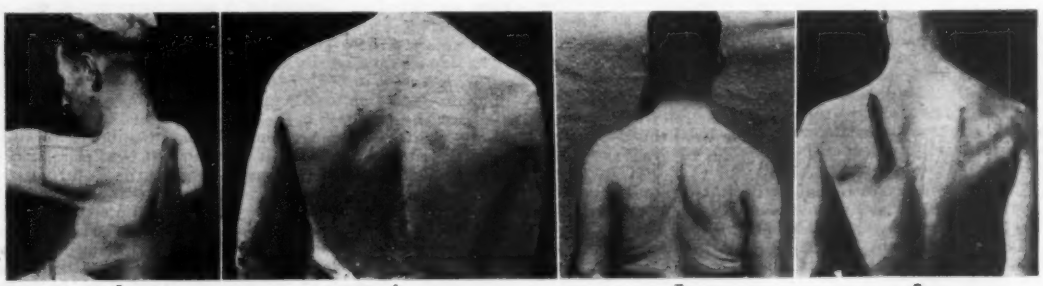
CLINICAL FEATURES

In 42 of these 46 cases the onset of the illness was characterised by sharp pain about the affected shoulder. It was felt in one, two or three fairly well-localised points and in some it radiated down the arm. The painful sites were usually to be found along the upper border of the trapezius, over the spinati and the belly of the deltoid. Pain was sometimes felt along the inner border of the scapula, in the axilla or up the side of the neck. Many patients said it was severe and burning and nearly all of them needed analgesics. Morphia was required in 4. The pain was commonly worse at night and disturbed or prevented sleep. It was aggravated by lying on the affected side and persisted acutely for from 3 to 14 days; thereafter it rapidly subsided, but in a few cases a chronic ache with occasional exacerbation was complained of for 6 or 7 weeks. The pressure of braces or the weight of a gun or pack aggravated the discomfort. Carrying a weight on the affected side became impossible. In 4 patients there was no history of acute pain and the disability was not noticed until weakness had developed. I formed the impression that pain was more severe in those muscles which subsequently showed atrophy, with the possible exception of the serratus magnus when pain was often mild or absent.

With one exception, the onset and course of the malady was afebrile. Headache, malaise, sweating, flushing, drowsiness, faucial inflammation, loss of appetite, vomiting and diarrhœa were never observed; nor were stiffness of the neck and spine, diffuse hyperæsthesia or alteration of tendon reflexes. The painful sites were invariably tender but no vasomotor or trophic changes developed in the hand on the affected side. There were no cranial nerve palsies. In 9 cases in which the white cells were counted results were normal. The cerebrospinal fluid was examined in 13 instances, in 7 during the acute phase; in none was there any cellular reaction and in only one was the protein content raised (60 mg.). Weakness about the shoulder girdle usually followed in 4 or 5 days but in a few it seemed to be present on the second day, while rarely it followed after a few weeks had elapsed. The most striking feature of the illness was the frequency with which it resulted in wasting of certain muscles about the shoulder girdle. In most cases this atrophy was considerable and led to much disability. I have never seen any certain restoration of muscle tissue in such cases but in the mild examples there was slow improvement. The right side was affected in 30 patients, the left side in 9 while in 7 the lesion was bilateral (but always asymmetrical). The muscles affected were:

	Cases		Cases
Serratus magnus	34	Trapezius	11
Spinati	24	Sternomastoid	1
Deltoid	17	Rhomboids	?

In 19 instances the muscle or muscles supplied by one nerve only were affected; serratus magnus 13, spinati 2, deltoid 4. No definite weakness or atrophy was ever detected in the pectorals, latissimus dorsi, biceps, triceps, brachialis, brachioradialis or the muscles of the forearm and hand. The legs were never involved. In the absence of involvement of the deltoid no cutaneous sensory alterations were detected. Of 17 patients in whom the deltoid was affected there was sensory loss over the cutaneous zone supplied by the circumflex nerve in 10. It was absent in 3 and not recorded in 4. As would be expected effective movements of the shoulder girdle were greatly hampered. The wasted deltoid with paralysis of abduction, the hollowed supraspinous and infraspinous fossæ of the scapula and the winging of the scapula, alone or in various combinations, produced a striking deformity of the shoulder girdle (figs. 1–6). Atrophy of the serratus digitations could be identified in 2 cases. The lower fibres of the trapezius were affected more often than the upper, and sometimes resulted in slight winging or inward displacement of the inferior angle of the scapula. In one patient wasting



5 6 7 8

Paralysis of right serratus magnus. Atrophy of right deltoid and spinati. Wasting of right trapezius and deltoid. Wasting and weakness of left trapezius and serratus magnus.

weakness and loss of faradic responses of the sternomastoid was associated with complete trapezius involvement on the same side. In no case was there any convincing evidence of involvement of the rhomboids.

PROGNOSIS AND TREATMENT

I have not been able to follow up these patients personally but have been impressed by the failure to improve in those cases developing obvious atrophy. Mild cases were returned to duty or down-graded while those with a pronounced disability were evacuated. The usual forms of treatment for neuritis in general did not seem to alter the course of the illness. Analgesics, physiotherapy and relaxation of paralysed muscles were prescribed. Relaxation of the serratus magnus is difficult to secure. Several patients showed no improvement after 7 or 8 months. Permanent paralysis of the serratus magnus is such a troublesome disability that the question of transplanting the sternocostal portion of pectoralis major from the humerus to the inferior angle of the scapula, as originally suggested by Sherren, might well have to be considered.

NATURE OF THE ILLNESS

If these patients are seen for the first time some months after the acute phase the malady might be mistaken for poliomyelitis: the end-result can be identical in both diseases. Consideration of a few features, however, should lead to the exclusion of poliomyelitis.

1. There is a striking absence of general signs of infection (such as fever and leucocytosis), and of signs of meningeal irritation.

2. Examinations of CSF, so far as they go, have yielded normal results; but further information is needed.

3. Diffuse hyperæsthesia, so characteristic of poliomyelitis in the acute phase, was not encountered, whereas definite cutaneous sensory loss of peripheral distribution was detected in 10 out of 17 cases where a mixed motor and sensory nerve was involved (for example, the circumflex).

4. The distribution of the paralysis about the shoulder girdle took on a peripheral rather than a segmental character. In 19 patients only one nerve was impaired while the deltoid escaped in no less than 29—a very unusual finding in cervical poliomyelitis.

5. In 26 patients the illness developed while they were convalescing from some complaint—again an unusual finding in poliomyelitis.

6. It would be unlikely to expect so many cases of atypical localised cervical poliomyelitis in the absence of typical examples of the disease at about the same time in the same locality. I have seen 1 case of poliomyelitis during the past 9 months.

It is interesting to compare these observations with those made during the recent epidemic of poliomyelitis in Malta (Tunbridge 1943).

In a series of 58 cases 43 ran a fever for from 2 to 8 days The CSF was normal in 2 instances only; it was examined in 57 patients and showed characteristic increase of protein and cells (up to 900 per c.mm.). In only 7 patients was the disability confined to one arm or shoulder while the deltoid escaped in only one patient out of a total of 36 in whom the cervical cord was involved. Paralysis failed to develop in 2 patients. This low figure is interesting in view of the general awareness of medical officers on the island and the fact that a sharp lookout was kept for early cases. It contrasts remarkably with the experience of New Zealand medical officers in the ME who record that of 40 cases 19 did not develop paralysis. Fever was absent in 4 and headache in only 1 case. Backache was present in 20, spinal rigidity in 16, neck rigidity in 25, photophobia in 17, pain on movement of the eyes in 16 and vomiting in 23 (Caughey 1943). The CSF showed the usual picture of mixed pleocytosis. It is reasonable to conclude therefore that the condition under discussion is not poliomyelitis although no doubt the two diseases can be confused.

The question next to consider is that of acute brachial radiculitis or neuritis. As ordinarily understood these terms imply an interstitial inflammation of the nerve trunks of the brachial plexus or of the emerging peripheral nerves. The clinical features are pain, tenderness, paræsthesiæ and sometimes trophic changes. General weakness of the arm is the rule rather than paralysis of individual muscles while gross permanent atrophy and a peripheral type of sensory loss are rare sequels. Fibrillation and alteration of tendon reflexes are common while there may be evidence of fibrositis elsewhere. Recovery is the rule. This is a sequence rather different from that outlined in this series. The freedom enjoyed by other muscles (pectorals, latissimus dorsi, rhomboids, biceps, triceps, brachialis and brachioradialis) innervated from the same segmental level (cervical 5, 6 and 7) of the spinal cord suggests that the lesion is not a diffuse affection of the brachial plexus or spinal nerve-roots. Isolated paralysis of the serratus magnus, spinati or deltoid muscles can only be explained on the basis of a peripheral mononeuritis and combinations of these would not be unexpected.

It is therefore deduced that the lesion is essentially peripheral. It may begin as a myositis or as a genuine peripheral neuritis. There is no doubt that the nerves (suprascapular, circumflex and long thoracic) themselves are involved in the pathological process. Muscle biopsy in the acute phase might yield some information.

ÆTIOLOGY

The uniformity of the clinical findings in this series is rather striking but this does not necessarily imply a common causation. Indeed these patients may represent a mixed group. What is certain, however, is that such cases were not common in civilian practice before the war. Isolated paralysis of the serratus magnus or spinati was rarely encountered, whereas many medical officers in the Army must have come across cases of this sort during the last 4 years. It would be interesting to know whether the affection has increased in civilian practice and whether it has occurred among Naval and RAF personnel. In respect of the Army patients two considerations spring to mind. Firstly, the upper arm has been subjected to many injections of substances which can produce a local neuritis (TAB, TT, serum, sulphonamides, emetine, quinine, &c.). In this series, however, the occasional examples of obvious association have been excluded; but others may have been included in which this relationship is less apparent. The preponderance of right-sided cases (30) and the selective nature of the muscle wasting suggests that "injection neuritis" is not an important factor.

Trauma also needs consideration. Cases with a history of direct trauma have been excluded from this series, but the problem of repeated minor traumata is difficult to solve. It is quite possible that the long thoracic and suprascapular nerves could be injured by carrying a weight (pack and rifle) across the shoulder. The constitutional type of shoulder girdle and the tone of the supporting muscles might then be secondary ætiological factors. Many of these patients, however, were employed in sedentary posts and it will be recalled that 26 of them developed the illness while convalescing in hospital from some other affection. Nevertheless, I can recall one patient who developed pain in the right shoulder after carrying out pack drill on the first morning of his return to duty after an attack of lobar pneumonia. He rapidly developed an isolated serratus palsy. I have never seen a typical case in an officer, though I understand they have been recorded.

There have been several recent papers dealing with relevant material.

Burnard and Fox (1942) of the New Zealand Medical Corps have published an account of 9 cases occurring in the 2nd New Zealand Expeditionary Force in the Middle East. They are similar to those I have described. The lesion was on the right side in 6 and on the left in 3. In 3 patients the onset was while they were in bed with some other complaint (bronchitis, influenza, and fractured leg). The trapezius was affected in all cases; the spinati in 5, the serratus magnus in 5, the deltoid in 4 (slight involvement only). The rhomboids were not affected but in one patient it was thought that the pectorals were slightly wasted. There was very doubtful wasting ($\frac{1}{2}$ in.) of the biceps in 4 and interosseous wasting in 2 patients. The authors noted that recovery was poor and concluded that the lesion was a multiple neuritis in the region of the shoulder girdle.

Richardson (1942) described 9 examples of serratus magnus palsy seen in soldiers at one military hospital in the United Kingdom during one year. In 6 the serratus magnus was the only muscle affected. In one the lower fibres of the trapezius

were also involved. In another the trapezius, infraspinatus, and deltoid of the other side were wasted while in the 9th case the deltoid and spinati of the opposite side were affected. The lesion was unilateral in 7 and bilateral in 2 patients. The right side was affected in 8 and the left side in 3 patients. A history of trauma was obtained in 1 case, 1 followed an attack of lobar pneumonia and 1 arose during glandular fever. An injection of antitetanic serum initiated another case.

Wyburn-Mason (1941) has drawn attention to the increase in the number of patients suffering from brachial neuritis who sought treatment at the outpatient department of the National Hospital. He saw 42 cases between December, 1940, and August, 1941. In most the paresis was general and in chronic cases it was followed by wasting. In a few patients wasting was limited to the serratus magnus and triceps. Sensory changes of a wide distribution were a constant finding. Prognosis was good in all but severe cases. The author mentioned that in 3 months he had also seen 7 of isolated paralysis of the external popliteal nerve. Foot-drop and characteristic sensory change were recorded and in one patient there was a simultaneous bout of brachial neuritis. None of the patients had had serum injections.

Macpherson and Clark (1943) have seen during one year 10 cases of isolated paralysis of the external popliteal nerve in soldiers serving in Malta. The onset was sudden, painless, and not accompanied by signs of general infection. They noted excellent recovery in all but with a tendency to relapse in a few patients. Over the same period they encountered cases of paralysis of the serratus magnus. One of these followed typhoid fever, one arose during an attack of infective hepatitis and the third appeared spontaneously. I have seen similar cases in the Middle East and the United Kingdom. I have records of 7 examples of paralysis of the external popliteal nerve, 7 of the musculospiral nerve, 4 of the anterior crural nerve, 1 of the lateral cutaneous nerve of the thigh and 1 of the ulnar nerve. The painless nature of the malady and the invariable recovery suggests an ætiology which differs from that of the shoulder-girdle affection. There were no cutaneous sores in these 20 patients.

CONCLUSION

Experience indicates, therefore, that there has been an increase in the incidence of brachial neuritis in civilians in Great Britain and in the incidence of isolated paralysis of individual nerves in the upper and lower limbs of soldiers both at home and in the Middle East.

A group of 46 cases has been defined in which an unusual degree of wasting of certain muscles about the shoulder girdle of fairly rapid onset has been the characteristic clinical feature. In some cases it seems that the disability is permanent.

The causes are unknown in most cases. It is probable that most of the shoulder-girdle cases belong to the same group but their relation to the isolated examples of neuritis of arm and leg is uncertain.

Civilian practitioners whom I have consulted in the Middle East have not seen such cases before and Sir James Purves-Stewart has informed me that in his capacity as consultant neurologist there in 1914–18 he did not see such cases.

I am grateful to Major-General Sir P. S. Tomlinson KBE, DSO, Director of Medical Services, MEF, for permission to publish this paper and to Brigadier D. McAlpine, FRCP, for his advice and suggestions.

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UNIVERSITY OF SHEFFIELD.—The following appointments have been made: Dr. A. I. G. McLaughlin, hon. lecturer in industrial medicine within the department of public health; Dr. P. E. H. Howarth and Dr. R. E. Peasegood, temporary demonstrators in anatomy; Captain J. H. Hale, RAMC, assistant bacteriologist and demonstrator in bacteriology.

OBSERVATIONS ON A TYPHUS EPIDEMIC

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IF history is correct most districts of Ireland must have been the seat of typhus fever at one time or another. With the passage of the century it has, except in a few isolated areas on the Western Seaboard, become almost unknown. Districts in these areas where it has been seen during the past fifty years are subject to constant supervision. A few years pass, perhaps a decade, and gradually the physician's conception of the disease changes from the aberrant forms with which previous epidemics started to the more classical book description. Thus one, two, or more atypical cases are missed and an affection dreaded by these same practitioners is under way again.

In circumstances such as these typhus fever broke out in the Spiddal area of West Galway during the period September–November, 1942. Several inhabited peninsulas, more or less isolated, along the south Connemara coast have experienced sporadic outbursts of the disease during the last decade, but Spiddal has been free since its last serious epidemic in 1903–05. At that time the fever was of a severe type with high mortality and its victims included the practitioner in the area. The last reported case in East County Galway was, as far as I can trace, in 1907 in the Loughrea townland. It seemed to me, therefore, that observations on the 1936 outbreak in Carraroe, the 1941 outbreak in Carna, and the recent Spiddal outbreak might be of interest. While the Spiddal outbreak was in progress a number of articles dealing with typhus appeared in the medical journals and so I had the opportunity of applying to an actual epidemic the professorial conception of the disease.

PLANNING CONTROL

The first 2 cases in the Spiddal outburst presented typical signs and symptoms of bronchopneumonia. They were treated as such and were eventually discharged, typhus being unsuspected. The third case presented all the symptoms of a pelvic abscess. She was fortunately diagnosed on the table before operation. Immediate investigation of the district disclosed the prevalence of what the inhabitants considered "influenza." The symptoms were lethargy, headache, and suffused eyes, the school-going child being especially affected. The school attendance register afforded the names of a considerable number of absentees who, when visited, either gave a history of illness or were actually ill. Those who were pyrexial presented a bluish-red to a slaty-blue rash in the epigastric region. Those who were convalescent gave a history of "influenza" with signs and symptoms such as those found in pyrexial cases; they looked anæmic, and were lethargic with a generalised mottling very like louse-bites. Others gave a similar history but presented no mottling. The onset of the disease in all was abrupt. In the course of investigations I visited a house one evening. Not having any proteus suspension with me I deferred a blood-slide test to the following day. When I called next morning all were acutely ill though on the previous day they had all been well and attending to routine duties. It was necessary at this stage to consider the means of detecting all possible cases and especially ambulant ones with few signs or symptoms. The slide-test was a help for the actual case, but what interpretation was to be given to the standard test which afforded agglutination to a proteus suspension of 1/50 in the ambulant person?

To collect and remove to the fever hospital those who were ill was a straightforward proposition: to detect those who had the disease but concealed it, or those who were incubating it, was a much different one. We had to decide first what we would accept as a diagnostic titre with the Weil-Felix test. Our plan of campaign was to do a Weil-Felix test on every contact, every child suspect in the area, and the occupants of all houses in which there was a history of illness within the previous two months or in which the state of cleanliness did not conform to average standards. A survey of the area revealed there were 535 such persons out of a population of 2222. An auxiliary fever hospital was

established in the area for cleansing, disinfesting and disinfecting, and for observation of doubtful cases; it was staffed with young fever-trained nurses having experience of typhus. Such a field unit has long been prominent in the recommendations of the chief medical adviser of the Local Government Department and this epidemic established its value beyond the slightest doubt.

Topley and Wilson[1] apropos of the Weil-Felix test write:

"A positive reaction at 1/25 during the first week of the disease may be considered as a presumptive positive, though it appears that about 7 to 9% of persons not suffering from typhus may react at this titre. As a rule the titre rises rapidly, so that a positive diagnosis 1/50 or higher can generally be made by the 8th day."

This we accepted as our standard but with the reservation to do a cross-section survey of the county later and check up on the reaction of patients who had typhus in previous years. The results of this survey I mention below. Any person, therefore, yielding a positive Weil-Felix 1/50 to a *Bacillus proteus* OX 19 suspension we brought in with his contacts to the auxiliary hospital. If, 2 days later, the titre of Weil-Felix rose above 1/50 we transferred that case to the central fever hospital. Bloods that yielded a doubtful reaction we referred for further Weil-Felix tests to extern pathologists. All negative were allowed to go home, their houses, clothing, and goods having been thoroughly treated during their period of detention. The district was, of course, isolated from the first suspicion of the disease, no person being allowed in or out except those who were certified by us as being non-contacts, having an absolutely negative Weil-Felix reaction, and whose clothing was subjected to steam disinfection. Isolating an inland area has difficulties but a coastal area presents the further problem of boat-control. It is recorded that in the 1860s when a major epidemic of typhus occurred in this locality a number of people sailed across the bay to another county and temporarily settled there with disastrous consequences to their new neighbours. All precautions to prevent this, however, were taken by us in this epidemic.

FINDINGS

In all, specimens of blood from 535 persons were examined by us for the Weil-Felix test. Of these people, 14 were typically ill with typhus and gave reactions varying from 1/150 to 1/3000 using *B. proteus* OX 19 suspension. One person of this group who was typically ill gave, on the second day of his illness, a positive reaction to 1/50 only. Of persons with a history of illness in the preceding month 89 gave positive Weil-Felix reactions varying from 1/50 to 1/350 to the same suspension, and 30 gave a negative reaction. With a history of illness in the previous two months 110 gave reactions as follows: 3 reacted to a titre of 1/12; 9 to a titre of 1/25; 7 to 1/50; 14 to 1/100; and 77 were negative. The bloods of those with no history of illness gave the following reactions: 8 agglutinated to a titre of 1/12; 3 to 1/25; 16 to 1/50, and 265 negative.

As regards the degree of verminous infestation of these 535 people: 289 showed verminous heads; 200 showed body lice; and 46 were clean; 2 of those who were clean gave a Weil-Felix reaction, one to 1/25, and the other to 1/50. It was observed that those who were most grossly affected with head and body lice (and this number did not exceed 15), yielded a negative Weil-Felix and had no history of illness. It seems surprising to me that these lice should have escaped infection, especially as the hosts were ambulant and freely mixed with the population. Out of a total population of 2222 about 22% had head and body lice which is not an excessive figure when one considers that in very many instances the housing conditions were very poor. As regards the lice collected in a test-tube from actual cases, no pinkish coloration was noticed, but when examined again two days later they appeared to be swollen. There was only one death in this epidemic, a boy aged 14½. Two patients had had the disease before, in 1903.

1. Topley, W. W. C. and Wilson, G. S. Principles of Bacteriology and Immunity, London, 1936, vol. II, p. 1209.

In the Carraroe outburst of 1936 there were 5 cases, all adults. The first was diagnosed as "carditis." This patient's wife, who also contracted the disease, had given nursing care to an old couple who had died a month before, and in view of the end-results there can be little doubt that they died of typhus; 2 others of the 5 who contracted the disease had attended the wake of the old couple; 1 of the 5 died. From the 4 cases who survived the infection I took samples of blood for Weil-Felix test in November, 1942. The results obtained were: 2 agglutinated *B. proteus* OX 19 in a titre of 1/50, one in 1/125, and one in 1/25.

In the Carna outburst of 1941 there were 8 cases, all adults. The first patient observed was the district nurse who was suffering from typical typhus, and who had been attending a tailor's household for illness resembling influenza. This household fell ill a fortnight after the death of the father, who had not summoned medical attention. It is presumed this man died of typhus but he is not included in the series of 8. There were no deaths among these. From 7 of them specimens of blood were taken and examined on Dec. 19, 1942; 1 gave a positive Weil-Felix 1/125; 5 gave 1/50; 1 1/25.

As stated above we decided to check on Weil-Felix results in non-typhus areas. The first area selected was in the western portion of the county in which families from poorer parts of Connemara were given land settlements. Families from the Lettermore area (which includes Carraroe) were selected for the blood test. A member of one of these families was contact to the epidemic there in 1936, and she yielded a positive 1/50 though she had been removed from the area for two years without further association with it in the meantime. Vermin were found on her; the 14 others tested were negative and averagely clean.

The next area selected was in the eastern portion of the county and here 20 children of the poorer class, showing evidence of vermin, were chosen for the test; 9 of these were found negative; 7 yielded a positive 1/12; and 4 yielded a partial-positive 1/20. There was no history of illness simulating influenza or typhus in the area.

An area in the most eastern portion of the county was now selected and 9 children were specifically chosen, 3 being exceptionally clean and well-nourished, and 6 being under-nourished, none too clean, showing evidence of vermin, and their parents unemployed. Of the latter group 2 specimens of blood proved unsuitable for examination. Not 1 of the rest of the dirty group gave a positive reaction to *B. proteus* OX 19 although 3 showed a titre of 1/25 to *B. proteus* XK. Of the clean children 1 gave a positive reaction of 1/125, the other 2 being negative. The boy showing the positive result had no history of illness.

In the north-eastern portion of the county a further district was selected and 9 children were chosen whose standard of cleanliness was the reverse of those dealt with in the last district—i.e., 6 were clean children, and 3 dirty, undernourished, and of unemployed parents. The children of the dirty group were all negative; 2 of the clean group gave agglutination to a titre of 1/25 *B. proteus* OX 19.

The figures quoted in the four areas above referred to must not be taken as a true index of the general standard of cleanliness, or uncleanliness, in the county at large, or in the particular areas, as the children were specially selected by us for the purpose of our test.

I consider it noteworthy that there is an obvious difference in dress between the affected people of the typhus sections of Connemara seaboard and the rest of County Galway. The underclothing worn by the former is of heavy closely-woven material, difficult to wash thoroughly and seldom changed, the same garments being worn day and night for long periods; on the other hand, those of the other areas wear lighter materials and often change their clothes or, should they have no change, at least turn them inside out so that a cleaner appearance is presented.

SUMMARY

Typhus in County Galway invariably makes its appearance in an aberrant form, thereby becoming established notwithstanding constant vigilance for signs or symptoms suggestive of it.

In periods between epidemics it appears to be kept alive in the area by conditions simulating colds or influenza, and being mild, without any mortality, is undetected, as such cases do not seek medical advice.

A Weil-Felix giving a positive reaction of 1/50 to a *B. proteus* OX 19 suspension, when associated with illness of even the severity of a cold or mild influenza, should be accepted as diagnostic and all precautions taken until a second test is done some days later. Should the titre then rise the evidence is conclusive.

The Weil-Felix reaction does not completely disappear within 6 years of the occurrence of the disease.

A second attack of typhus is possible, 2 such cases having occurred in the Spiddal area.

In all, 53 persons were examined from non-typhus areas. Of these, 3 gave a positive Weil-Felix reaction —1 at 1/125, 1 at 1/50, and 1 at 1/25. We considered the 1/25 reaction of no diagnostic import, the child being clean, well-nourished and having no history of illness. The person who gave the 1/50 was a known contact to the Carraroe epidemic in 1936. No reason can be advanced for the other case who was clean, well-nourished, and who had no history of illness, or contact with either a typhus patient or a typhus area.

RICKETTSIAL AGGLUTINATION STUDIES IN TYPHUS FEVER

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INVESTIGATIONS have been carried out upon the sera of certain patients convalescent from attacks of typhus fever contracted in the Spiddal area of Galway in 1942 as reported by McConn (1943). These studies formed part of a more extensive survey of the antibody response to infection and immunisation by rickettsiæ of the X19 group, but they yielded results which were considered sufficiently interesting to warrant separate publication.

Convalescent sera, which were collected at intervals of 2–5 months after the subsidence of fever, were examined for agglutinins to the OX proteus organisms, and to murine and epidemic rickettsiæ.

The proteus tests were carried out in the usual manner with alcoholised suspensions incubated at 50° C. for 4 hours and at 37° C. overnight.

Rickettsial suspensions were made by repeated centrifugation of lung emulsions of mice infected intranasally (Hudson 1940). The final washed deposit at 4000 r.p.m. was suspended in normal saline buffered to a pH of 7·3 with phosphate buffer; after incubation at 37° C. for 4 hours, to facilitate the flocculation of mouse protein, it was stored at 2° C. The supernatant was diluted to the desired opacity for use without formolisation or other chemical treatment and was used after 4 or 5 days' storage when the organisms were usually dead. Doubling dilutions of sera were made, an equal volume of suspension added, and incubation was carried out in Dreyer's tubes at 40° C. for 18 hours in a water-bath. The results are shown in table I which gives the titre of a serum as the reciprocal of the highest dilution (final) with which agglutination was distinctly visible with a hand-lens.

The murine strain was the Wilmington (US) strain; and two epidemic strains were employed—namely, the classical Breinl strain first isolated 15 years ago and a strain recovered from a case of louse-borne typhus in Cairo in 1942 by Major C. E. van Rooyen, RAMC.

Significantly elevated OX19 titres in excess of 50 were present in five of the nine cases and high OX2 titres in two of these and in one other. No case exhibited a high OXK titre. Rickettsial agglutinins were present in seven sera when examined with the Cairo strain, and two of these showed no reaction with Breinl or murine strains. Five of the sera reacted with all three rickettsial strains, and four of these showed a higher titre with the epidemic than the murine organism, the remaining serum having similar titres with all three strains. The intensity or completeness of agglutination in these five sera was also less with the murine than with the epidemic strains, and in two instances traces only of agglutination were obtained with the murine organism, whereas both epidemic strains gave two-plus (+) agglutination.

These results amply confirmed the belief that some at least of the patients had been infected by rickettsiæ of the X19 group, although the time of this infection could not be stated precisely in the absence of knowledge of the agglutinin titres during the early stages of the recent illnesses.

SIGNIFICANCE OF THE SEROLOGICAL RESULTS

Agglutination of rickettsiæ by human sera has in the past been studied chiefly in regions where typhus is endemic, and it is stated (Mosing 1938) that the test is a more trustworthy guide to infection than the Weil-Felix test. Tests made by us with rickettsial suspensions prepared as above indicate that sera from persons not exposed to rickettsial infection do not usually agglutinate rickettsiæ, although they often agglutinate proteus OX19 in dilutions of 1 : 20 to 1 : 40. Only 2 out of 45 sera from normal individuals showed weak agglutination of murine (but not epidemic) rickettsiæ, in dilutions not exceeding 1 : 40.

For a short time after inoculation with typhus vaccine (Cox type, 1939) most individuals had demonstrable agglutinins to the homologous rickettsiæ in titres of 40 to 320, and the appearance of these agglutinins was often associated with an increase in the OX19 agglutinin, usually two-fold in degree. Laboratory infection in inoculated persons working with rickettsiæ (Van den Ende et al. 1943) was consistently accompanied by the development of potent rickettsial agglutinin, although the OX19 agglutinin did not increase to the same degree in some of them. Sera from cases of typhus in the Middle East and elsewhere showed both rickettsial and OX19 agglutinins, and in these cases the titres of proteus agglutinin were often very high (640 to 10,000). Experimental infection of guineapigs and rabbits with rickettsiæ produced sera which were consistent in possessing rickettsial agglutinins but which had either no agglutinin or a weak titre of agglutinin to OX19.

TABLE I—AGGLUTINATION OF PROTEUS AND RICKETTSIA BY SERA OF IRISH CONVALESCENTS

Case	Duration of convalescence (months)	Proteus			Rickettsiæ		
					Murine	Epidemic	
		OX19	OX2	OXK		Breinl	Cairo
T. 1	3	500	125	50	160	640	640
T. 2	3	50	125	50	40	320	160
K. 1	4	125	50	50	0 (20)	0 (40)	0 (40)
K. 2	5	250	50	25	80	320	160
O'D. 1	2	250	25	25	80	80	80
O'D. 2	2½	250	125	25	80	320	80
O'D. 3	2½	25	25	25	0 (20)	—	0 (20)
L. 1	2	0 (25)	0 (25)	0 (25)	0 (20)	0 (40)	40
L. 2	2	50	50	50	0 (20)	0 (40)	80

Figures in parentheses give lowest dilution of serum tested which failed to give agglutination.

Table II, which sets out the results with representative sera from animals and from humans, indicates that the antibody response, as demonstrated by the agglutination of unmodified rickettsiæ, is relatively specific for the particular species of rickettsiæ concerned. Completely specific sera have not been encountered in either rabbits or humans, whose sera usually show a difference in titre of from four to eight-fold in favour of the homologous species. Yet convalescent sera from guineapigs infected with epidemic rickettsiæ have frequently no demonstrable agglutinins to murine strains, although they always agglutinate epidemic rickettsiæ. The two species of rickettsiæ, *R. prowazeki* and *R. mooseri*, which have long been known to possess common antigens (Zinsser and Castaneda 1932), thus appear to have specific antigens as well. Proof of the independence of these antigens has been sought by means of cross-absorption tests on guineapig and rabbit sera, and these have shown an inability of the heterologous rickettsia in each case

to remove the agglutinin for the homologous species although it is capable of removing agglutinin for itself. The homologous rickettsia removes agglutinin for both species. Similar results are reported by Plotz (1943) who employed the complement-fixation reaction to demonstrate the specificity of rickettsial antigens.

Thus far, insufficient sera from cases of human typhus, proven by the isolation of the causative rickettsiæ, have been examined for final conclusions to be drawn on the specific nature of the antibody response in man. The agglutination tests with sera from two individuals whose infecting strain was isolated and classified by Major van Rooyen on the basis of guineapig response are shown in table II. The results with these sera, and

TABLE II—AGGLUTINATION OF RICKETTSIA AND PROTEUS BY SERA FROM VARIOUS SOURCES

Serum		Rickettsial agglutination		Proteus OX19
Source	Nature of infection or inoculation	Murine	Epidemic (Breinl)	
Guinea-pigs				
220	No infection	0 (20)	0 (20)	0
146	Convalescent murine typhus	640	80	—
71	Convalescent epidemic typhus (Tunis)	0 (20)	160	0
Rabbits				
121	Inoculated living murine yolk-sac. 1 dose IP	1280	160	—
41/42	Ditto. 3 doses IP	320	160	50
27	Inoculated living epidemic yolk-sac. 1 dose IP	80	320	—
39/42	Ditto. 3 doses IP	160	640	0
101	Inoculated formolised murine rickettsiæ. 3 doses IV	640	160	—
38/42	Inoculated formolised epidemic rickettsiæ. 3 doses IV	640 (tr)	1280	—
Human				
S	Laboratory infection (murine) 14th day *	640	320	40
R	Ditto (epidemic) 12th day *	80	640	50
T	Middle East murine typhus 21st day †	2560	640	2500
Y	Middle East epidemic typhus 24th day †	1280	10,240	5000
P	Inoculated formolised epidemic rickettsiæ (Cox) 3 doses SC	80	640	80

* Cases in workers previously immunised with epidemic vaccine.

† Sera from Middle East sent by Major van Rooyen who isolated typhus strains, respectively orchitic and non-orchitic, from the blood.

IP = intraperitoneal. IV = intravenous. SC = subcutaneous.

with sera from cases of laboratory infection and from inoculated persons, have yielded presumptive evidence that human cases of typhus can be classified by means of rickettsial agglutination into murine and epidemic types.

The Irish cases of typhus were, on this basis, classified as infections due to epidemic rather than to murine rickettsiæ. Final proof must await the recovery of the causative organism in Irish typhus and study of its behaviour and serological structure.

DISCUSSION

Until recently the only laboratory method available for the differentiation of human typhus into epidemic and murine types was the classification by guineapig reaction of the strains of rickettsiæ recovered from the patients into non-orchitic and orchitic categories. Plotz (1943) showed by means of the complement-fixation reaction that rickettsial antigens could be used to demonstrate specific differences between the two species of rickettsiæ, and that the results with human sera indicated that Brill's disease was serologically related to epidemic rather than to murine typhus. The results of agglutination tests described above on sera from experimentally infected animals, and of absorption tests upon these sera, indicate that rickettsial agglutination is another possible method of demonstrating specific differences between *R. prowazeki* and *R. mooseri*. The application of these findings to human cases of typhus suggests that rickettsial agglutination can be employed to differentiate epidemic and murine typhus and thus to throw light on the epidemiology of the disease.

The data indicate that the cases of typhus in Galway were due to *R. prowazeki*, and this agrees with the observation of McConn (1943) that the disease was louse-borne. As there had been no epidemic in this area since 1905, the incrimination of epidemic rickettsia as the causative organism of the recent outbreak raises the problem of the mode of survival of the organism in inter-epidemic periods.

In the first place, it appears impossible to rule out the occurrence of sporadic cases of typhus in Ireland in the inter-epidemic period. Mosing (1938) described the atypical character of epidemic typhus in Poland before the war and found that the Weil-Felix test often gave equivocal results in such cases. The essentially benign character of the Spiddal outbreak and the particular affection of children attending school certainly suggest that the population had been partially immunised by previous attacks of the disease.

Secondly, even in the absence of actual cases of the disease, rickettsiæ can remain viable in several ways. Zinsser's observations on Brill's disease (1934) showed that latent infection must at times follow an attack of the epidemic form of typhus in man, while in murine typhus the rat forms a similar reservoir of infection. There is however no proof that a human reservoir could give rise to an epidemic of typhus, for Mosing (1938) was unable to infect lice by feeding them on human typhus convalescents. Dried infected louse fæces which, are known to remain infective for long periods (Arkwright and Bacot 1923, Starzyk 1936, Fejgin 1936) might initiate an infection which could spread by lice and thus they provide a further mode of survival of rickettsiæ between outbreaks or sporadic cases.

SUMMARY

1. Rickettsial agglutination tests with sera from animals experimentally infected with typhus indicate specific differences between epidemic and murine rickettsiæ.

2. Human cases of typhus have been classified by means of rickettsial agglutination tests, and the recent cases in Galway have been found to belong to the epidemic serological type.

3. The bearing of these observations upon the epidemiology of the disease is briefly discussed.

The Irish sera were received by the courtesy of Dr. C. F. McConn, acting MOH for Galway, and Prof. R. A. Q. O'Meara of Trinity College, Dublin, to whom we wish to express our best thanks. Sera from the Middle East have been received by the kindness of Major C. E. van Rooyen, RAMC, and the courtesy of Colonel J. S. K. Boyd, OBE, DDP Middle East Forces. We wish to thank the Director of Pathology, Major-General L. T. Poole, DSO, MC, KHP, for providing facilities for the experimental work and for his never-failing interest.

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LECTURES ON POSTWAR RELIEF.—On Oct. 25 Dr. N. M. Goodman gave the first of these lectures which are being held at the Royal College of Nursing, 1a, Henrietta Place, London, W.1, on Mondays at 2.30 PM. Dr. Goodman spoke on health in Europe and other lecturers are to include Miss Evenson (matron-in-chief of the Norwegian nursing service), Miss Zaphiriou (Greece), Miss Paskuszova (Czechoslovakia), Nurse Godlowska (Poland), Mlle Janssens (Belgian Red Cross), Dr. Joles (Netherlands), and Prof. J. R. Marrack. Tickets for the lectures, which are open without fee to nurses of allied or enemy-occupied countries, may be obtained from the director of the education department at the college.

COSTOCLAVICULAR COMPRESSION OF THE SUBCLAVIAN ARTERY AND VEIN

RELATION TO THE SCALENUS ANTICUS* SYNDROME

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A NUMBER of views have been put forward as to the mechanism of the vascular disturbances produced in the arm by a cervical rib or sometimes by a first thoracic rib. The purpose of this paper is to describe 3 cases in which there was evidence of intermittent compression of the subclavian artery and vein between the clavicle and first thoracic rib. In order to elaborate certain observations made in these cases, a fourth is described with neurological disturbances only. Our observations indicate that the most common view which considers that these vascular disturbances are connected with spasm of the scalenus anterior muscle is not applicable to all cases.

CASE 1

A healthy well-built man, aged 28, in the middle of June, 1942, suddenly noticed pain and tinglings in the ring and little fingers and outer border of the thumb of the left hand while performing his accustomed canteen duties. That night the pain kept him awake, forcing him to walk up and down nursing his arm. Next day at times the whole hand felt numb below the wrist, at other times as the numbness was passing off he would have an intolerable aching pain in the hand which shortly disappeared when it became "alive" again. During the following few days the numbness, paræsthesiæ and pain lessened, but his left hand seemed weaker and colder than before. Often his hand would turn blue with the cold, though it never went white. He was given massage and physiotherapy with only slight benefit, and as improvement was delayed he was transferred to a military hospital on Sept. 17, 1942.

Examination showed slight wasting of the muscles of the left forequarter without specific wasting of any particular group. The left hand was colder and bluer than the right; this was confirmed by thermocouples which showed at room temperature a difference of 6° C. between the skin temperatures of the fingers of the two hands, a difference which diminished to a constant of 2·5° C. after the patient's trunk had been heated under a hot-air cradle for 2 hours. There was weakness of the forearm muscles, and a "glove" type of cutaneous sensory impairment to pinprick and cotton-wool over the forearm and hand. Electromyograms of the left arm muscles were normal (Weddell et al. 1943), and there was no significant difference in the sweating reactions of the two sides (chinizarin method; Guttmann 1940). On hyperextension of the neck (Adson and Coffey's manœuvre 1927) or on posterior abduction of the shoulders (Eden's manœuvre 1939) the pulsation of the brachial, radial and ulnar arteries disappeared in the left arm but not in the right. X rays of the neck showed no cervical rib but an asymmetrical thoracic inlet; the left first rib was less oblique than the right and its anterior end together with the medial end of the left clavicle was higher than on the right side (fig. 1). The diagnosis made was scalenus anticus syndrome with involvement of the subclavian artery.

On Oct. 11, 1942, the lower part of the left posterior triangle of the neck was explored under local anæsthesia through an incision just above and parallel to the middle third of the clavicle. The external jugular vein was divided, the clavicular head of the sternomastoid muscle severed, and the posterior belly of the omohyoid muscle retracted upwards. After the phrenic nerve had been identified and retracted medially, the scalenus anterior muscle, the third part of the subclavian artery and the trunks of the brachial plexus were clearly defined. The patient was then asked to hyperextend his neck. The scalenus anterior muscle, which was of normal size, contracted vigorously but the pulsations of the third part of the subclavian artery were only very slightly diminished; the radial pulse, however, completely disappeared. The scalenus anterior muscle was stimulated faradically, but its contraction had no effect on the subclavian or radial pulse. The scalenus anterior muscle was then divided just above the first rib, revealing that there had been an appreciable interval between the scalenus anterior and medius muscles, in which the subclavian artery and brachial plexus had lain without compression or undue angulation. It was now apparent that there was a slight fusiform dilatation of the subclavian artery between the lateral border of the scalenus anterior muscle and the lateral edge of the first rib; the circumference of this part of the artery was 5 mm. greater than in the second part. The lower trunk of the brachial plexus crossed the rib behind it without tension. The patient again hyperextended his neck and again the radial pulse disappeared. This confirmed that the now divided scalenus anterior muscle had not been responsible for the arterial compression. During this manœuvre the space between the back of the clavicle and the outer edge of the first thoracic rib at the level of the subclavian artery narrowed down, nipping the forefinger inserted into it. This space was therefore measured with a series of instruments employed as "feelers"; with the arm lying loosely by the side it measured 1·7 cm., whereas with the arm forcibly abducted in a posterior direction or with the neck extended it narrowed to 0·7 cm. These observations indicated that the subclavian artery was being nipped between the clavicle and the rib. A segment of rib 2·5 cm. long (indicated in fig. 1), with its periosteum, was removed from beneath the subclavian artery and brachial plexus, leaving a gutter into which these structures sank. Posterior abduction of the shoulder now no longer affected the radial pulse. While the rib was being resected an intravenous anæsthetic was given; during this stage a small tear was made in the pleura resulting in a pneumothorax. Convalescence was straightforward except for temporary slight lower chest pain.

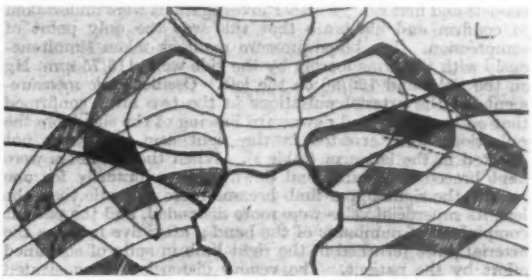

Fig. 1—Case 1. Tracing of radiogram showing asymmetry of thoracic inlet. The dotted lines enclose the resected part of the left first rib.

Next day both radial pulses felt equally strong and the left one no longer disappeared on active movements either of the neck or shoulder; the motor weakness and sensory loss had also disappeared. The temperature of the left hand rose steadily, so that 4 weeks later the skin temperature readings were equal on the fingers of the two hands, both at room temperature and after heating. Oscillometry showed that the arterial pulsations in the left arm were still a little less vigorous than in the right arm, but were damped down only slightly on hyperextension of the neck or on bracing the shoulders back.

Comments.—In this case contraction of the scalenus anterior muscle either voluntarily or on faradic stimulation was not responsible for the obliteration of the radial pulse. The left subclavian artery was compressed between the outer edge of the first rib and the back of the clavicle during hyperextension of the neck or by forcibly bracing the shoulders back. This compression was completely relieved by removal of a segment of rib from beneath the subclavian artery. The ætiological factor leading to compression of the subclavian artery on the left side but not on the right was an asymmetry of the thoracic inlet.

CASE 2

A sedentary worker of slender build, aged 20, was admitted to a military hospital on Dec. 20, 1942. He had joined the Army 6 months before admission and soon found that after marching for more than 10 minutes his right hand would become numb and weak and tinglings would appear in the fingers. He experienced a similar sensation whenever he wore a heavy pack braced across his shoulders. He had never had any similar symptoms in civil life, nor had he had symptoms in his left hand. The only relevant fact in the

* In the modern terminology this muscle is known as the scalenus anterior.

past history was that he had fractured his left clavicle 14 months earlier.

The contours of the two arms were equal, and there was no evidence of wasting, weakness or sensory change. At rest the arterial pulses in each upper limb could be easily palpated, but every time he braced his shoulders backwards and downwards the pulsations of the brachial, radial and ulnar arteries on the right side instantly disappeared, whereas on the left side they were unaffected. During this manœuvre the third part of the right subclavian artery continued to pulsate vigorously. When the observer placed his index fingers above the middle third of the clavicle on each side, the interspace between the clavicle and first rib could be felt to narrow and disappear on the right side, but not on the left. In this case, contrary to what had happened in case 1, hyperextension of the neck had no effect on the pulses. X rays of the neck showed a symmetrical thoracic inlet without cervical rib, but the left clavicle was bowed forwards as a result of the old fracture. No differences were noted in the sweating responses of the two limbs, and the skin temperatures of the two hands were equal at room temperature and after heating.

From these observations there was strong circumstantial evidence of compression of the subclavian artery between clavicle and first rib. Further investigations were undertaken to confirm and elaborate that this was the only point of compression. The blood-pressure readings taken simultaneously with the arms loosely by the side were 118/75 mm. Hg on the right and 120/80 on the left. Oscillometric measurements of the arterial pulsations in the two arms confirmed that on backward and downward bracing of the shoulders the pulsations were arrested in the right arm, but were not affected in the left arm (table 1). When the shoulders were kept braced backwards and downwards voluntarily for one minute the right upper limb became more cyanotic than the left, its superficial veins were more distended, and the patient complained of numbness of the hand; after five minutes the arterial pulse returned in the right limb in spite of sustained effort by the patient. The venous distension demonstrated by this manœuvre was further studied by infrared photography (figs. 2 and 3). This revealed that during this test collateral venous channels were being utilised. On the right side the basilic vein and other superficial veins of the arm drained via the superficial pectoral veins to the venous channels at the base of the neck, and not into the deep veins of the axilla as in the normal subject. It was thus evident that there was a venous obstruction as well as the arterial one, and it was presumed that the subclavian vein was being compressed by the same mechanism as the artery—an approximation of the clavicle to the first rib. The influence of the

TABLE I—OSCILLOMETRY IN CASE 2 (PACHON OSCILLOMETER)

Pressure in mm. Hg	Oscillometric index		Pressure in mm. Hg	Oscillometric index	
	With arms at rest	With shoulders braced backwards		With arms at rest	With shoulders braced backwards
Right arm			*Left arm*		
100	5	0	100	4½	3½
80	4	0	80	3	2
60	1½	0	60	1	½
40	½	0	40	½	0

scalenus anterior in these manœuvres was then investigated by paralysing the muscle with an infiltration of 10 c.cm. of 1% procaine as advocated by Gage (1939). After complete paralysis of this muscle was obvious to palpation and had been confirmed by electromyography, the various manœuvres were repeated and obliteration of the arterial pulses and venous engorgement were again found to occur on the right side.

Operation was then considered, but was thought to be unwarranted. The symptoms appeared only when the patient was marching or carrying a heavy pack. Moreover, he had finished his preliminary training and was returning for non-combatant duties to a unit where it was clear that he could perform his work satisfactorily without symptoms.

Comments.—In this case there is strong evidence of a compression of both the right subclavian artery and vein between the clavicle and first thoracic rib during backward and downward bracing of the shoulders. The right scalenus anterior muscle was proved to have no influence on the compression of the artery and vein during this manœuvre. The left subclavian vessels were probably spared owing to the forward bowing of the clavicle resulting from a previous fracture.

CASE 3

A member of the WAAF, aged 22, was admitted to a military hospital on Dec. 17, 1942, complaining of clumsiness of the left hand for a year. The hand always felt cold. For the previous 4 months she had noticed pins and needles extending down the inner border of the forearm to the tips of the medial two fingers whenever the arm hung by her side. These paræsthesiæ were relieved by elevation of the limb.

Examination showed well-marked weakness and wasting of the intrinsic muscles of the left hand and ulnar side of the forearm, with gross wasting of the opponens and abductor pollicis muscles of the type described by Wilson (1912) as often associated with cervical rib. Electromyography showed numerous fibrillation action potentials in these two muscles and no motor unit activity; in the remaining hand muscles there were no fibrillation action potentials but reduced motor unit activity, which suggested a nerve block without structural damage. There was slight impairment of sensibility to pinprick and cotton-wool over an ill-defined area comprising all fingers and the ulnar border of the left forearm. There was spontaneous sweating on the palms of both hands, left more than right, and after heating a relative hypohidrosis over the whole left little finger. Both hands were cold but showed equal skin-temperature readings, at room temperature and after heating. X rays of the thoracic inlet showed bilateral rudimentary cervical ribs; the left measured 3 cm. and the right 2·2 cm. ('Precision' stereoscope of Caldwell and Molly). The thoracic inlet formed by the first thoracic ribs was asymmetrical; as in case 1 the left first rib appeared shorter and less oblique than the right, and its anterior end together with the medial end of the left clavicle was on a higher level. An attempt was made to measure radiologically the interspaces between the clavicle and first rib in the region of the groove for the subclavian artery with the precision stereoscope. It proved technically impossible to identify accurately the nearest opposing points on the two bones to ensure an absolute measurement. An estimate of the space between the upper border of the clavicle and the outer edge of the first rib at rest was 1·4 cm. on the left and 1·7 cm. on the right. After hyperextension of the neck it narrowed to 1 cm. on the left and 1·2 cm. on the right. These figures confirmed the asymmetry of the thoracic inlet and indicated that the space between rib and clavicle was narrow.

On hyperextension of the neck, or on backward and downward bracing of the shoulders, the pulsations of the brachial and radial arteries of the left arm disappeared. On the right side the corresponding arterial pulsations as measured by oscillometry diminished but did not disappear. There was evidence of intermittent venous obstruction on the left side similar to that in case 2 after both shoulders had been braced backwards for a minute, and this was confirmed by infrared photography. The clinical picture was thus one of neurological disturbances without persistent vascular changes.

At operation on Jan. 19, 1943, the scalenus anterior muscle, subclavian artery and brachial plexus on the left side were explored under local anæsthesia by an approach similar to that employed in case 1. During backward and downward bracing of the shoulders and hyperextension of the neck the scalenus anterior muscle contracted, the pulsations of the third part of the subclavian artery diminished perceptibly, and the radial pulse disappeared. The interspace between rib and clavicle at the level of the subclavian artery was estimated as in case 1: at rest it measured 1·8 cm.; when the shoulders were braced backwards and downwards it narrowed to 0·6 cm. Opposite the subclavian vein there was at rest an interval of 0·6 cm.; on backwards and downwards bracing of the shoulders this narrowed to less than 0·4 cm. Next the scalenus anterior muscle was stimulated with a powerful faradic current and its vigorous contraction was accompanied by complete disappearance of the pulsations of the third part of the subclavian artery. It was also noticed that the lower trunk of the brachial plexus, with the second part of the subclavian artery interposed between it and the contracting scalenus anterior muscle, was being compressed against the tip of the cervical rib. An intravenous anæsthetic was then given and the scalenus anterior divided above the first rib. The lower trunk of the brachial plexus was seen to

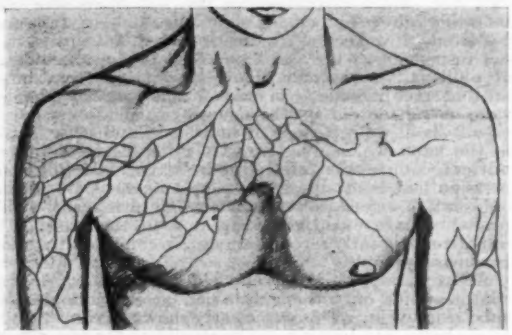

Fig. 2—Case 2. Tracing of infrared photograph taken with shoulders at rest.

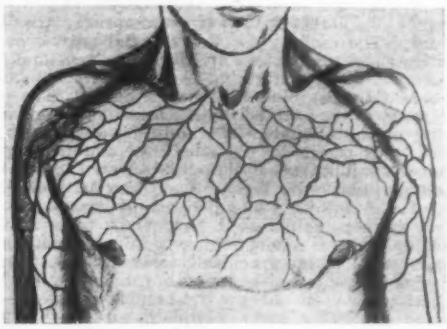

Fig. 3—Case 2. Tracing of infrared photograph with shoulders braced backwards and downwards, showing distension of superficial arm and pectoral veins on the right side.

be surrounded by a thickened fibrous sheath in the region of the tip of the cervical rib and neck of the first thoracic rib; here it rested on a dense layer of fascia passing downwards from the cervical rib. The anterior portion of the cervical rib was then excised, relieving the pressure on the lower trunk of the brachial plexus. Finally the lower trunk of the plexus was dissected out of its thickened adventitial sheath. After freeing it appeared normal.

The postoperative result was satisfactory. There was immediate subjective and objective improvement in the power and dexterity of the left hand and a diminution of the sensory changes. Three weeks later electromyography showed normal motor unit activity in most of the intrinsic hand muscles in addition to fibrillation and the reappearance of a few motor unit action potentials in the opponens and abductor pollicis muscles. After heating there was now hypohidrosis only over the tip of the left little finger, while the sensory disturbance had disappeared. However, on backward and downward bracing of the shoulders the pulsations of the brachial and radial arteries of the left arm still disappeared, and venous congestion in the pectoral region again became apparent; but hyperextension of the neck no longer affected the arterial pulses. It had been observed at operation that there were two points at which the subclavian artery was being compressed—between the scalenus anterior and the apex of the cervical rib, and between the clavicle and first thoracic rib. Since an adequate cause of the dominating neurological features had been found and dealt with by removal of the tip of the cervical rib, this lower interspace was nor disturbed, especially as there were no symptoms attributable to compression at this point. The fact that after operation the arterial pulses still disappeared on backward bracing of the shoulders but not on hyperextension of the neck shows that the scalenus anterior muscle, which had been divided, played no part in the first manœuvre though it did in the second.

Comments.—The neurological features observed were due to compression of the lower trunk of the brachial plexus against the tip of a small cervical rib. Contractions of the scalenus anterior muscle played a part in maintaining this compression. The left subclavian artery was being compressed intermittently at two places—between the scalenus anterior and the tip of the cervical rib, and between the clavicle and first thoracic rib. After division of the scalenus anterior muscle, compression of the left subclavian artery and vein between the clavicle and first thoracic rib persisted on backward and downward bracing of the shoulders but not on hyperextension of the neck. On the right side there were no vascular disturbances. Oscillometry indicated only a partial obstruction of the subclavian artery on backward and downward bracing of the shoulders on this side. The asymmetry of the thoracic inlet would account for the greater compression of the left subclavian artery.

CASE 4

A man, aged 28, who showed only neurological abnormalities, was admitted to a military hospital on Dec. 15, 1942 with 17 weeks history of paræsthesiæ and numbness of the ulnar 1½ fingers of the left hand, with weakness and wasting of all the intrinsic muscles including the thenar muscles. There was a zone of diminished cutaneous sensibility over segmental areas C8 and T1, greater to pinprick than to cotton-wool, suggesting a nerve root as opposed to a peripheral nerve lesion (Weddell 1941). Sweating tests showed a slight delay in secretion in response to heating along the ulnar border of the left forearm and hand. Electromyography showed fibrillation action potentials and diminished motor unit activity in all the intrinsic hand muscles, indicating slight lower motor neurone denervation. All muscles responded normally to faradism. No diminution in the pulsations of the brachial or radial arteries was observed in the arms on either hyperextension of the neck or backward and downward bracing of the shoulders. X rays of the neck showed enlarged transverse processes on the 7th cervical vertebra but no cervical ribs; the thoracic inlet was symmetrical. The case therefore appeared to be one of "scalenus anticus syndrome" with neurological changes from involvement of the lower trunk of the brachial plexus.

At operation on Jan. 12, 1943, through an exposure similar to that employed in cases 1 and 3, the only abnormal finding was a taut tendinous band about 6 mm. wide by 1 mm. thick, probably representing the scalenus minimus of Albinus (Jones 1911), which passed downwards from the transverse process of the 7th cervical vertebra to be inserted into the inner border of the first rib between the subclavian artery and the first thoracic nerve root. It compressed the lower trunk of the plexus against the neck of the first rib. It was divided and a groove was noted in the nerve trunk at the point of compression. On passive hyperextension of the neck the scalenus anterior muscle, which was left intact, did not compress either the subclavian artery or the lower cord of the brachial plexus. The interval between the clavicle and the first rib at the level of the subclavian artery was not less than 1·8 cm. after the shoulders had been pushed firmly backwards and downwards.

After the operation the muscle weakness and sensory changes immediately disappeared as far as could be determined clinically. In addition, the muscle wasting rapidly disappeared and within a month was no longer perceptible. Electromyography now showed vigorous motor unit activity; but the fibrillation action potentials were still present and the slight disturbance of sweat secretion noted before operation had not yet disappeared.

Comments.—The neurological signs observed in this case were due to compression of the lower trunk of the brachial plexus against the first rib by a tendinous band, division of which was followed by clinical cure. They were not due to any action of the scalenus anterior muscle, which was not divided at operation. There were no signs suggesting compression of the subclavian artery and vein, and at operation there was not sufficient approximation of the clavicle to the first rib on manipulation of the shoulder to cause compression of the subclavian vessels.

TESTS IN NORMAL SUBJECTS

The four cases demonstrate the value of testing the effects of postural manœuvres of the shoulder girdle on the arterial pulsations of the limb as a diagnostic measure when costoclavicular compression of the subclavian vessels is suspected. To assess the frequency with which the subclavian artery can be compressed in normal subjects we performed these postural manœuvres in 50 men and 50 women aged 19–47 years, chosen at

random from the staff and convalescent patients of a military hospital. Table II summarises the main findings. The radial pulse was affected on one or both sides by these manœuvres in 25 of the men and 30 of the women, being obliterated in 18 and 19 respectively. The condition was bilateral in 62 subjects. The pulses were more often affected by backward and downward bracing of the shoulders (54 subjects) than by hyperextension of the neck (20 subjects), and in only one instance (a woman) were the pulses affected by the latter manœuvre when the former had been without effect. Few of the subjects complained of symptoms, but several women volunteered that they were liable to chilblains on their hands or fingers in cold weather, and so each subject was specifically asked about this. Of 45 persons whose pulses were not affected, only one complained of chilblains on the hands; 14 women and one man who suffered from chilblains on both hands had some bilateral alteration of the pulses. Moreover, of 11

TABLE II—EFFECT OF FORCED POSTURES ON THE RADIAL PULSES OF NORMAL PERSONS

—	On backward and downward bracing of shoulders	On hyperextension of neck	On either manœuvre	Subject to chilblains on hands
50 men				
No effect on pulses	25	41	25	1
One or both radial pulses diminished only	7	1	7	0
One or both radial pulses obliterated	18	8	18	1
50 women				
No effect on pulses	21	39	20	0
One or both radial pulses diminished only	11	7	11	2
One or both radial pulses obliterated	18	4	19	12

women in whom the pulse was involved on one side, 3 who complained of chilblains had them on the affected side only. These observations suggest that costoclavicular compression may be one of the predisposing causes of chilblains in the hands, but it obviously cannot be the basic cause because it does not explain chilblains in other parts of the body. Other symptoms, short of obliterative arterial disease, which may be shown in mild cases are transient numbness and tinglings in the hands and fingers while the arm is actually in the position which compresses the artery. This may be occasioned by carrying heavy weights, or in the Services by marching with full pack.

DISCUSSION

Eden (1939) has surveyed the chief theories concerning the origin of vascular complications of cervical ribs and first thoracic rib abnormalities. He described three cases (including one reported by Lewis and Pickering in 1934) with obliterative arterial disease affecting the distal arteries of the limb, in which it was shown at operation that the subclavian artery was being compressed between the clavicle and first rib when the arm was abducted. In addition he tabulated 45 published cases of cervical rib or first thoracic rib abnormalities with vascular complications; from an analysis of these he suggested that the vascular disturbances resulted from direct injury to the subclavian artery. Eden then elaborated the hypothesis, first advanced by Lewis and Pickering (1934) that at the point of trauma an intimal thrombus may form in the damaged artery, and that the phenomena of obliterative arterial disease, such as "Raynaud attacks" in the fingers, obliteration of one of the distal or main arteries of the limb, and ultimate gangrene, are the result of emboli dislodged into the blood-stream from this mural thrombus. Eden advocated that enough of the offending rib should be removed to allow the artery to pass freely beneath the clavicle without compression, and pointed out that division of the scalenus anterior muscle alone is often insufficient to prevent further trauma.

The vascular changes in our 3 cases were less severe than in those reported by Eden; only in case 1 was there evidence of obliterative vascular changes. In this case the skin temperature of the left hand was considerably lower than on the right side, and the difference persisted after heating, indicating that vasospasm was not responsible. In cases 2 and 3 there was no evidence of obliterative vascular changes resulting from intermittent compression. In case 3 the vascular changes were overshadowed by the neurological features, but in case 2 there were periods of numbness and paræsthesiæ in the hand which were directly referable to the intermittent compression of the main artery. If this compression had been allowed to persist unchecked, signs of obliterative arterial disease increasing in severity would probably have eventually appeared in this case. The importance of early recognition of this condition therefore becomes apparent.

Approximation of the clavicle to the first rib can compress not only the subclavian artery but also the subclavian vein. This was clearly shown in cases 2 and 3 when backward bracing of the shoulders for one minute led to distension of the superficial veins of the limb with the opening up of collateral venous channels across the pectoral region to the deep veins of the neck. This phenomenon was not looked for in case 1. It has been previously recorded by Adson and Coffey (1927) in a case of cervical rib showing vascular changes and was considered by them to be due to sympathetic dysfunction.

More than one postural manœuvre involving the shoulder girdle may result in compression of the subclavian vessels. The movement which does this most constantly is backward and downward bracing of the shoulders, but hyperextension of the neck, as described by Adson and Coffey (1927) will also do it in a proportion of cases. Backward and downward bracing of the shoulders is the motion which most directly approximates the clavicle to the first rib (fig. 4). Hyperextension of the neck probably also narrows the angle between the first rib and the clavicle. In this manœuvre the scalene muscle may play a part as an elevator of the anterior end of the first rib. In 62% of the normal persons examined by us costoclavicular compression of the subclavian vessels was a bilateral phenomenon. However, in cases of cervical ribs or first thoracic rib abnormalities with vascular symptoms which have been described, symptoms and signs seem to be more pronounced on one side. This may be due (as was clearly shown in cases 1 and 3) to asymmetry of the thoracic inlet leading to a narrower interspace between clavicle and first rib on one side than on the other. It is interesting to note that in case 2 a previous fracture had altered the contours of the left clavicle, increasing the interspace on that side.

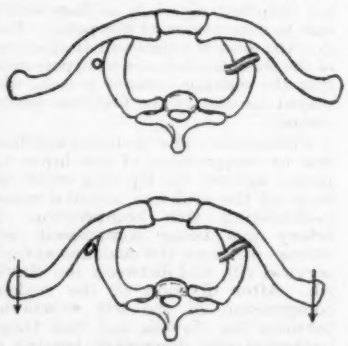

Fig 4.—Diagrams illustrating mechanism of costoclavicular compression of subclavian artery on backward and downward bracing of shoulders.

Symptoms of obliterative arterial disease due to cervical rib or first thoracic rib abnormalities are rare. Eden in 1939 collected only 48 published cases. But our experience in the Services suggests that mild vascular symptoms referable to these rib abnormalities are more frequent than has been suspected. (We have seen 6 cases with mild vascular symptoms in 8 months.) Two factors probably account for this. Most persons in the Services are subject to greater physical stress involving their shoulders than in civil life, and they also report to their medical officers when symptoms first appear, long before the stage of obliterative arterial disease (case 2).

Among the older hypotheses concerning the mechanism of the vascular changes in the arm which were discussed by Eden were those of Murphy (1905), Todd (1913), Leriche (1935), Telford and Stopford (1931), and Blair, Davies and McKissock (1935). Murphy held that the

subclavian artery was compressed between the scalenus anterior muscle and the rib, while the others believed that nervous factors were responsible for the vascular changes through sympathetic nerve dysfunction. Eden brought forward evidence against the concepts of sympathetic irritation, but did not refer to the many recent elaborations of Murphy's view that the artery might be compressed between the scalenus anterior muscle and the rib, or that the scalenus anterior itself plays a major part in the production of symptoms. Advocates of the "scalenus anticus syndrome" associated with either cervical rib or first thoracic rib abnormalities (Adson and Coffey 1927, Ochsner, Gage and DeBakey 1935, Naffziger and Grant 1938; and many others) recognise two main groups of cases—those in which vascular disturbances are prominent and a larger group in which neurological features predominate. For both groups division of the scalenus anterior muscle is recommended. Undoubtedly in some cases division of this muscle is followed by improvement or recovery, but this is not true of all cases which come under this diagnosis. Thus in our first 3 cases the vascular phenomena persisted even after the scalenus anterior had been divided, or paralysed by local anæsthesia. A striking instance was Eden's third case, in which two operations had to be carried out. At the first operation the scalenus anterior was divided without benefit; at the second a portion of the first rib was removed with consequent improvement in symptoms. Case 4 shows that the scalenus anterior is not always responsible for the neurological abnormalities, but that other factors such as compression of nerve trunks by bands are the cause.

In addition to the observation that division of the scalenus anterior sometimes fails to relieve symptoms, there are two other features found in many cases with vascular symptoms which cannot be satisfactorily explained on the basis of a "scalenus anticus syndrome." At operation the subclavian artery is usually found to be pulsating vigorously where it lies on the rib lateral to the scalenus anterior. Most authorities have attempted to explain this by modifications of Todd's theory, that sympathetic irritation results from pressure of the rib on the lower trunk of the brachial plexus and gives rise to peripheral vasospasm. Objections to these hypotheses have been put forward by Eden (1939). The third feature, which hitherto has been difficult to explain, is that many cases of aneurysm or aneurysmal dilatation of the third part of the subclavian artery have now been described in relation to cervical ribs. Such authorities as Halsted (1916) and Matas (1935) have laboured hard to explain their occurrence distal to the presumed point of obstruction of the artery behind the scalenus anterior. All these hypotheses, however, lose their importance if it is accepted that the point of obstruction is between the clavicle and first thoracic rib distal to the third part of the subclavian artery.

Without the postural manœuvres described, the intermittent arterial obstruction in our cases would have passed unnoticed. It is therefore recommended that they be employed in all cases of obscure vascular disturbance in the upper limbs. It must be remembered that these movements obliterate the pulses in a considerable proportion of normal people (see table II). A positive result should therefore only be considered significant when other causes of vascular disturbance have been excluded. The presence or absence of scalenus anterior spasm can be confirmed by repeating the tests after paralysing the muscle with a local anæsthetic. Valuable additional tests are afforded by oscillometry and skin temperature determinations.

The treatment of costoclavicular compression of the subclavian vessels depends on the severity of the vascular disorders. In cases of "scalenus anticus syndrome" where the symptoms are mild (as in our case 2), Naffziger and Grant (1938) recommended exercises designed to strengthen the shoulder girdle and so lessen the gravitational drag of the upper limb on the trunk. They reported that improvement in posture is often followed by benefit and even complete relief. It is difficult to conceive how these exercises can relieve a scalenus anterior compression, but since they may relieve a costoclavicular compression it is more probable that it was the latter mechanism which operated in their successful cases. Following Naffziger and Grant's results we recommend remedial exercises in cases with mild vascular symptoms; in cases with neurological disturbances early exploration is essential if complete recovery is to be obtained (see case 4). Surgical treatment is indicated whenever features of obliterative arterial disease are present. The operation should primarily be exploratory, for the site of the compression of the subclavian artery must first be ascertained. This part of the operation is preferably done under local anæsthesia. If the artery pulsates vigorously lateral to the scalenus anterior muscle, especially while the muscle is contracting during faradic stimulation, it should be observed whether the tip of the forefinger is nipped in the interspace between rib and clavicle when the shoulder is braced backwards or downwards. If a compression is demonstrated at this level only, the essential part of the operative procedure should be the removal of a segment of the rib from beneath the artery. During this stage of the operation intravenous or inhalation anæsthesia can be given. It is preferable to remove the periosteum so as to prevent regeneration of the rib, but technically this may be difficult and incurs the risk of penumothorax. Division of the scalenus anterior alone may be insufficient to relieve the compression, as was shown in our first and third cases and in Eden's third case.

SUMMARY

Three cases of vascular disturbance in the upper limb due to compression of the subclavian artery and vein between clavicle and first thoracic rib are described. In one of these in which cervical ribs were demonstrated the subclavian artery was being compressed at two places—between the scalenus anterior muscle and the apex of the cervical rib; and between the clavicle and first rib. In a fourth case, which showed neurological disturbances only, the subclavian vessels were not compressed, and relief was obtained by section of a fibrous band compressing C8 and T1 nerve-roots without division of the scalenus anterior.

Costoclavicular compression of the subclavian vessels can be recognised by observing the effect of postural manœuvres of the shoulder girdle on the arterial pulses of the limb. Backward and downward bracing of the shoulders is the movement which obliterates the pulses most readily.

The subclavian vessels can be compressed by these forced manœuvres in many normal subjects. Symptoms arise only when this compression is easily provoked, and if the compression is not relieved at an early stage features of obliterative arterial disease may supervene. Symptoms range from cold blue hands with a tendency to chilblains in the mildest group of cases to "Raynaud attacks," arterial thromboses and even gangrene in the more severe cases.

In the past these cases have been confused with those of the "scalenus anticus syndrome." They may be differentiated by paralysing the scalenus anterior muscle with a local anæsthetic.

In milder cases benefit may be obtained by remedial exercises designed to increase the postural tone in the muscles of the shoulder girdle. In more severe cases operation is required and is best begun under local anæsthesia. The site of compression of the subclavian artery between clavicle and first rib is demonstrated by getting the patient to brace his shoulders backwards and downwards. In positive cases the tip of the forefinger is nipped between the clavicle and the rib and the radial pulse disappears. When a compression at this level is present, the essential part of the operation is removal of a segment of the offending rib from beneath the artery, for division of the scalenus anterior muscle alone may be ineffective.

We are indebted to Lieut.-Colonel G. O. Chambers, RAMC, our commanding officer, for permission to publish this paper; to Brigadier Hugh Cairns and Air-Commodore C. P. Symonds for advice and criticism during the course of the investigations; to Major C. A. Calvert, RAMC, for referring case 3 to us for operation; and to Miss Jill Platts for the illustrations.

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CHRONIC FLEXNER DYSENTERY TREATED WITH SUCCINYLSULPHATHIAZOLE

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SEVERAL reports from this country and America have established sulphaguanidine as a potent remedy in the bacillary dysenteries. Its value in surgical diseases of the gastro-intestinal tract is limited owing to the drug being "too readily absorbed . . . giving rise to frequent and severe reactions," and being "ineffectual in the presence of ulcerating lesions of the bowel." Poth and others[1] investigated a number of sulphonamide compounds with the object of finding one which overcame these limitations. Succinylsulphathiazole ('Sulphasuxidine') was eventually chosen because its absorption was slight (about 5% excreted by the kidneys), severe toxic reactions were not encountered, and it drastically reduced the number of coliform bacilli in the stools (in some instances to zero).[2] The few papers available indicate that the new compound is as efficient as sulphaguanidine in the treatment of Shiga, Flexner and Sonne dysenteries. if not more so. Its mode of action is as yet unexplained, although it may depend on the liberation of free sulphathiazole, inhibited from absorption by the succinyl radical. Poth's suggestion that it leads to "a high local concentration of . . . nascent sulphathiazole in intimate contact with the organism" is purely speculative.

In the case described below, the dosage of the drug was approximately that recommended[3 4]—namely, 0·25 g. per kg. body-weight a day.

A female chronic schizophrenic, aged 36, who enjoyed indifferent health, developed pyrexia with frequent relaxed slimy stools on Nov. 10, 1941. No blood was passed. The acute symptoms lasted for a few days and gradually subsided. On Dec. 12 a report on the stools was positive for Flexner's dysentery. There was a recurrence of diarrhœa without pyrexia in February and March, 1942, and on repeated examination of the stools some of them still showed Flexner's bacilli. A course of sulphaguanidine was began on March 25, 1942, the initial dosage being 9 g. a day. Because of occasional diarrhœa persisting during the therapy, the drug was continued for a month, 126 g. being administered in all. For the next 3 months the diarrhœa was considerably checked, but the patient continued to excrete the bacillus off and on. A second course of sulphaguanidine was begun on July 5, 1942, 60 g. being administered in 7 days. Intermittent diarrhœa persisted and the organism continued to be excreted. Further 7-day courses of sulphaguanidine were administered, beginning on Aug. 15, 1942 (46 g.) and on March 6, 1943 (50 g.), but they were ineffective. On April 27 a 7-day course of succinylsulphathiazole was begun, 9 g. being given each day, divided into three equal doses. The patient's diarrhœa then ceased, her general condition notably improved and the stools have been consistently negative for Flexner since.

This was a striking result. Here was a chronic dysenteric, who had diarrhœa and positive stools on and off for nearly 18 months before sulphasuxidine therapy was instituted. Sulphaguanidine had been tried on four separate occasions without success. Yet after a single course of succinylsulphathiazole her symptoms cleared and the stools became negative for the dysentery bacillus. As far as we are aware, no similar case has yet been reported, although Kirby and Rantz[5] report success in the treatment of 5 dysentery carriers; unfortunately they give no details of these in their paper.

1. Poth, E. J., Knotts, F. L., Lee, J. T. and Inui, F. *Arch. Surg. Chicago*, 1942, **44**, 187.
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Reviews of Books

A Pocket Surgery

PHILIP H. MITCHINER, MD, MS LOND., FRCS, major-general (TA) DDMS Command; surgeon to St. Thomas's Hospital; A. HEDLEY WHYTE, MS DURH., FRCS, surgeon to Royal Victoria Infirmary, Newcastle-on-Tyne; brigadier (TA) consulting surgeon, Northern Command. (Churchill. Pp, 272. 10*s*. 6*d*.)

WRITING for Service medical officers, the authors have compressed many useful facts into this small manual of surgery. Thoughtful selection and terse phrasing have enabled them to cover a wide field, important and everyday conditions (such as acute abdominal disease and swellings of the scrotum) being fully and clearly dealt with, while less common problems are outlined in a few apt words. Naturally such brevity occasionally misinforms: they cannot surely believe that nuclear prolapse is so often the cause of sciatica as their text seems to indicate, nor that spontaneous rupture of a pelvic abscess is preferable to its treatment by timely incision, either through the abdomen or via the rectum. Nor do they explain why they think early diagnosis of pregnancy is unnecessary and that the Aschheim-Zondek test need never be done under existing conditions; service officers find the former necessary and difficult, and the latter remarkably useful. They rightly advise against medical students using this volume as a "cram book," but service medical officers would do well to carry it about with them. It will be specially welcome to those who find the surgeon's knife in their hands either for the first time or after long abstinence.

Social Service in the Clinic for Venereal Diseases

(2nd ed.) DOROTHY MANCHÉE. (Baillière. Pp. 117. 5*s*.)

THE second edition of Miss Manchée's book follows the lines adopted in the original edition, but is brought up to date by a detailed description of Regulation 33B and reference to the Adoption of Children (Regulation) Act which came into force as recently as last June. Other information in the appendix includes the location and hours of treatment centres, and the addresses of agencies and organisations to which application may be made for the various forms of assistance which the venereal patient may require to facilitate continued attendance at the clinic. The book will prove useful to those who are interested in social service in general, and may assist the young almoner to decide to specialise in the varied duties which may fall to her lot if appointed almoner to a VD clinic. That these duties differ considerably from those of the almoner of a general hospital is made clear, and the human interest of her work is emphasised as well as the patience, perseverance and tact it calls for. It is to be hoped that this little book may encourage the appointment of almoners in all the larger VD centres, and help to bring forward for training sufficient women suited to the task.

Medical Practice

British Encyclopædia of Surveys and Abstracts 1942–43; Cumulative Supplement. Editor: Sir HUMPHRY ROLLESTON, Bt., MD CAMB., FRCP. (Butterworth. Pp. 342, 382. 35*s*.)

THE new volume of the encyclopædia and its cumulative supplement reflect their usual credit on editor and publishers. The critical surveys by seventeen distinguished contributors summarise the year's advances in a wide medical and surgical field, and the abstracts of current published work are able and informative. The supplement, which replaces its predecessors, brings up to date the accounts of disease set out in earlier volumes. Together they are one answer to the busy practitioner's query "How am I to keep my knowledge of medicine up to date?"

5. Kirby, W. M. M., Rantz, L. A. *J. Amer. med. Ass.* 1942, **119**, 615.

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[1] *J. Amer. med. Assoc.* (1941) 117, 1496.

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THE LANCET

LONDON: SATURDAY, OCTOBER 30, 1943

OUTPATIENTS FIRST

THE last twenty years have seen a steadily increasing demand by the public for those elaborate methods of investigation and treatment that cannot be economically supplied outside large hospitals. In consequence hospital authorities in many districts have been faced with lengthening lists of patients awaiting admission. To meet this situation many voluntary hospitals have built new wards, or enlarged old ones, and many municipal authorities have increased and improved the accommodation previously provided in the buildings of the old workhouse infirmaries. These measures were expensive and also involved increase of kitchen, heating and other domestic facilities, and quarters for the additional nursing and administrative staff required. Yet when the extensions were finished, there was no great or lasting reduction of the waiting-lists; for the patients were mostly seeking specialised service, particularly from the pathological or radiological departments, and these had seldom been enlarged. The bottleneck was in the special departments, and often enough the new beds were occupied by patients merely waiting for diagnosis.

There are many indications that the demand for specialist investigation in hospital will rise after the war. At the least, some extension of the National Health Insurance may be expected, and its benefits are likely to include consultant service. In such circumstances it will not be easy for the family doctor to refuse a note of reference to a hospital if the patient wants it, even though he may think it unnecessary. The public is well aware of the uses of radiography in the diagnosis of dyspepsia and pulmonary disease. A growing proportion of the profession have been trained in places where special tests are readily available, and later tend to rely on them greatly—some say excessively. Again, the reports of the professional defence societies and the newspaper publicity given to errors in diagnosis emphasise the need for special investigations, and the risks of omitting them.

In planning for the future these tendencies and the lessons of the past need to be borne in mind. It is uneconomical to admit a patient to the general wards of a hospital if he requires no more than board and lodging while investigations are made. Hitherto this has been done simply because there was no alternative, but it means that routine duties connected with the admission, feeding and discharge of minor cases distract the attention of the nursing staff from the care of the acutely sick. Even when these cases are dealt with as outpatients it often happens that the routine work of the main departments is held up by unexpected arrivals, who have to wait their turn in lobbies improvised in the corridors and landings of the hospital. The position is likely to become still worse if the old mistakes are repeated in hospitals built on the outskirts of large towns, or as centres to serve large areas. More patients may then travel longish distances and need to remain overnight. If the general wards are the only place available for them these wards will be further congested.

The right solution seems to be the provision of outpatient blocks at all large hospitals. Compared with existing outpatient departments, they should be far more fully equipped in technical apparatus, staff and accommodation for patients. Besides the standard waiting-rooms, consulting-rooms, and theatres for minor operations, there should be a branch of the main pathological laboratory of the hospital, capable of dealing on the spot—and in quantity—with such routine tests as blood-counts, blood-sugar estimations, simple staining, and the preparation of cultures and specimens; for there will surely be large follow-up clinics for diabetes and blood diseases at least. Similarly there should be an outpatient X-ray department, staffed by technicians and capable of taking routine films to be interpreted by the specialists. A secretarial staff, to deal immediately with letters to the patients' doctors, while the particulars of the case are still fresh in the consultant's mind, is an ideal that many have dreamed of, but few enjoy. For those patients who have to stay a few hours, there should be comfortable waiting-rooms, and a buffet where cheap meals can be had. Finally there should be a hostel for those who must be detained for a night or two but who do not need special nursing; this should have single bedrooms, or small wards, with central dining and recreation rooms. Such procedures as radiography of barium meals, pyelography, and surface application of radium could be carried out on patients resident in such a hostel. Again, those who have had minor operations could be kept for the night, and relatives of the dangerously ill, or of young children, could also stay there if they came from a distance. After these tests were finished, or the short postoperative period passed, the patients could again see their original outpatient consultant before returning to their homes. Only a small minority would have to be admitted to the main wards of the hospital. The members of the staff in charge of outpatients would have the satisfaction of dealing personally with the great majority of the cases sent them; they would no longer have to transfer them to the beds of their senior colleagues in charge of the main hospital wards. The outpatient block would require only a comparatively small nursing staff to deal with tests and dressings, for the administrative work of seeing that patients keep their appointments, and of guiding them to the special departments, could be perfectly well dealt with by a lay staff. The health propaganda service for the region would find such a centre a profitable field for its endeavours; it would give them a chance to strike while the iron was hot. A representative of the hospital almoner's department, or citizen's advice bureau, should be provided with an office in the building.

In a hospital with an enlarged outpatient department of this kind the turnover of patients would be much increased and their overhead cost correspondingly reduced. The public would receive a quicker and a far more convenient service than has hitherto been rendered by most institutions. The provision of convalescent homes and rehabilitation centres, so

that the patients' stay in the general wards is reduced to a minimum, is a complementary solution—though that is another story. Hospitals faced with a long or growing waiting-list, and those planning for the future, will do well, we believe, to consider carefully whether they cannot meet the needs of the public in one or both of these ways more economically than by providing additional beds.

PROGRESS WITH PENICILLIN

THE American report [1] on 500 cases treated with penicillin under the direction of a committee of the National Research Council brings out the drug's potentialities in a variety of infections, particularly those that seemed most likely to arise among the armed forces or were resistant to sulphonamides. These included generalised and localised staphylococcal infection, pyogenic meningitis and empyema, pneumococcal pneumonia, sulphonamide-resistant gonorrhœa, and subacute bacterial endocarditis. The purified drug, standardised to the Oxford unit, was given intravenously, intramuscularly or locally, cases of empyema and meningitis being treated by injections into the pleural cavity or spinal canal. For the intravenous route, injections containing not more than 1000 units per c.cm., or a continuous drip of penicillin dissolved in saline or 5% glucose, were used at the rate of 5000–10,000 units per hour. For intramuscular injections, given every 2–3 hours, a concentrated solution of penicillin, usually equivalent to 5000 units per c.cm., was used. Adequate or optimum dosage has not yet been clearly defined, and seems to vary considerably with different patients and different infections. The objective must be to maintain a concentration in the blood sufficient to inhibit the growth of the infecting organism. Repeated estimation of the bacteriostatic power of the patient's serum against either the particular infecting organism or a standard culture of staphylococcus or streptococcus can best be made by FLEMING's [2] slide-cell technique, which is not difficult to master and requires only minimal amounts of blood such as can be obtained by finger or ear puncture. Adequate dosage may also be assessed by the patient's clinical response, and here change in the constitutional symptoms is at least as important as improvement in the temperature and pulse. It was found that in the normal person penicillin given intravenously or intramuscularly does not reach the spinal fluid; so, as FLEMING discovered, the drug must be given both intrathecally and intramuscularly for the effective treatment of meningitis.

At first sight the results in the American series are disappointing. Of 91 patients with staphylococcal bacteræmia, 34 died and 3 showed no improvement. This 40% failure in generalised staphylococcal infection is partly explained by inadequate dosage in cases treated early in the series, and by the inclusion of 9 cases of staphylococcal endocarditis, 3 cases of bilateral suppurative pyelonephritis and 3 cases with extensive burns. It emphasises the need for early diagnosis with immediate and adequate treatment, which may mean a total dosage of half a million to a million units over 7–14 days. Among localised staphylococcal infections excellent results were obtained in osteomyelitis; exudate quickly dried up, sinuses healed and chronic lesions disappeared in a few weeks. Even more striking was the rapid improvement in 7 out of 9 cases of staphylococcal empyema after a few days' local injections totalling 40,000–50,000 units of penicillin. Of 23 patients with severe hæmolytic streptococcus infection that failed to respond to sulphonamides, 13 recovered or improved, 7 died and 3 were unaffected. The results in anaerobic and non-hæmolytic streptococcus infections were less satisfactory, while penicillin in doses ranging from 240,000 to 1,760,000 units failed with one possible exception to cure 17 cases of bacterial endocarditis. However, the committee hold out some hope from early and prolonged treatment of cases infected with the more susceptible strains of *Streptococcus viridans*. Pneumococcal pneumonia responded well, often to remarkably small doses (100,000 units or less), but only 7 of 23 cases of pneumococcal meningitis recovered; it is only fair to add that not all of these were treated intrathecally. The cure of 125 out of 129 cases of sulphonamide-resistant gonorrhœa within 9–48 hours by doses of 100,000–160,000 units needs no comment. Only 5 cases of meningococcal meningitis were treated, with 1 death. The report suggests a scheme of dosage for different infections and different routes, and advises continuance of treatment for a week after temperature is normal. Toxic reactions were rare: there were occasional chills and fever; urticaria occurred in 14 cases, and local thrombophlebitis after intravenous injection in 19 cases. This valuable report will, we hope, soon be followed by a similar record of the collective experience with penicillin among our own Service and civilian sick.

Meanwhile the search goes on for improved methods of production and for alternative bactericidal substances from other moulds or bacteria. CLIFTON,[3] for example, has adapted the principle of the generator process for making vinegar to the production of penicillin on an experimental scale. Active principles have been extracted from aspergillus,[4] from actinomyces [5] and from other moulds. [6] The use of the ester of penicillin [7] may obviate the need for frequent injections, while a possible synergism between penicillin and sulphonamides or even *p*-aminobenzoic acid [8] deserves further exploration. But production of penicillin still lags far behind demand, and despite ministerial reassurance it is difficult to escape an uneasy feeling that not everything possible is being done to expedite supplies.

TEACHING OF PREVENTIVE MEDICINE

THE interim report of the social and preventive medicine committee of the Royal College of Physicians, published this week, is of fundamental importance in the teaching of medicine. Here for the first time in this country are drawn together into a comprehensible pattern those many-coloured threads of sanitary science, public health and social medicine which no one person has hitherto been able to disentangle and weave into a whole.

1. *J. Amer. med. Ass.* Aug. 28, 1943, p. 1217.
2. Fleming, A. *Lancet*, Oct. 9, 1943, p. 434.
3. Clifton, C. E. *Science*, July 16, 1943, p. 69.
4. Bush, M. T. and Goth, A. *J. Pharmacol.* 1943, 78, 164.
5. Gardner, A. D. and Chain, E. *Brit. J. exp. Path.* 1942, 23, 123.
6. See Atkinson, M. *Med. J. Aust.* 1943, i, 359.
7. Meyer, K. F., Hobby, G. L. and Dawson, M. H. *Proc. Soc. exp. Biol. N.Y.* 1943, 53, 100.
8. Ungar, J. *Nature, Lond.* Aug. 28 1943, p. 245.

The report deals with the teaching of social and preventive medicine to undergraduates and with the arrangements for that teaching inside the hospital: a sequel will cover its organisation outside. "Social Medicine," according to the committee, "is concerned with the social environment and with heredity in so far as they affect health and well-being. Preventive Medicine is more executive in outlook and comprises the design and direction of measures for the preservation of health and the prevention of disease." These definitions are not entirely satisfactory, since social medicine—though a vast subject in itself—is clearly but one aspect of preventive medicine. To immunise a child against diphtheria is preventive, not social, medicine; to remove bad housing conditions may be both; to pay allowances to persons with tuberculosis to induce earlier treatment is clearly social medicine but equally a part of preventive medicine. This obscurity, however, does not greatly matter, since the report makes no practical distinction between the two and couples them together except in the discussion of the comparatively new specialty of Social Medicine in its strict sense.

As is well known to individual teachers of these subjects, little has been done to put into effect the aspiration of the General Medical Council that the student should have his attention directed to the preventive aspects of disease. Even where progressive schools have tried to attain the object of the GMC by splitting up the course among the usual clinical teachers, little integration has been achieved and what was at least a single subject under the hand of one man has been shared out among persons some of whom are uninterested in these aspects, and consequently there are sometimes wide gaps in the student's knowledge. For this reason, among others, it is recommended that "every medical school should establish a Department of Social and Preventive Medicine, the size and scope of the department depending upon the facilities and personnel available." The organisation of such a department and the qualifications to be required of its head—admittedly a rare combination at present—are discussed in some detail. The report boldly sets out a curriculum in social and preventive medicine, to include the historical approach; the existing health services; epidemiology and vital statistics; maternity and infant welfare; school medical services; tuberculosis and venereal diseases; industrial medicine; health education and rehabilitation. This arrangement agrees with the general lines laid down by FITZGERALD[1] following his world survey in 1936–37. Perhaps the coffin is nailed down a little too closely on "sanitation." "The environmental services *as such* need not detain the student . . . the technical details of ventilation, smoke abatement, water supplies, sewage disposal and other objective health studies are matters for post-graduate instruction for the diploma in public health." True; but every doctor should know something, however little, more than the average layman of such matters as the sources of pollution of a water-supply, the disposal of excreta in a camp or dampness in houses. Much time might be saved in teaching these matters by instructional films, to which the report hardly alludes, were suitable films available.

1. FitzGerald, J. G. *J. Amer. med. Ass.* 1938, **110**, 1321.

By far the most interesting part of the curriculum is the new ground broken by the proposed introduction, in the final stage, of instruction in the technique of social investigation and case-taking, linked up with the health centre, the almoner's department and the psychiatric social worker. By these or other methods, this had been achieved abroad before the war—as was shown by GOODMAN[2]—notably in the USA, at Nancy and in Brussels, and although the organisation is difficult, it is certainly possible. All this can, the committee think, be achieved without a great increase in the time allotted to the subject, except in the London schools, whose comparatively poor showing in this respect is well known.

The arrangements for social medicine inside the hospital depend upon the almoner's department, and useful information and advice is given on its organisation and extension, which should finally dispose of the idea that the almoner is a kind of unauthorised tax-gatherer, solely concerned with the collection of money. The teaching of social and preventive medicine to nurses and the use of psychiatric social workers is also discussed and the report ends with seven recommendations, which call for the establishment of a department of social and preventive medicine in every teaching school to organise a modernised course covering the three clinical years, including social medicine in the strict sense and industrial medicine; for the setting up of student health services, used as an instrument of teaching, and under the general direction of the department; for the employment of almoners and psychiatric social workers; and for the Royal College of Physicians to take an active part in the organisation of the teaching of this great subject to students, nurses and medical social workers.

This is the report long awaited by those who have felt that preventive medicine will never achieve its rightful place until a new generation of students, trained in its principles, pass on to provide teachers having the true "preventive outlook." By producing this document, and its companion on the teaching of psychological medicine which we summarise on p. 553, the College has indicated objectives and provided plans of attack. It is for the teaching schools to capture and consolidate the positions.

WAR AND THE DOCTOR

THERE are said to be only seven basic jokes, and sometimes it looks as though the same may be true of ideas. Certainly fundamental principles in medicine and surgery have recurred from time to time to the mind of man, attended by all the thunder of revelation; and advances have commonly been in methods of applying them rather than in the principles themselves. War-time advances in technique are commonly of this kind. Thus PARÉ's belief in the gentle usage of wounds finds beautiful expression in modern plaster technique; and the "flying ambulances" devised for taking the wounded to the rear by Napoleon's surgeon, Larrey, have now achieved a literal interpretation. In the extracts from Prof. HUME's Harveian oration which appear on another page, there are several enlightening examples of this kind. His hearers and his readers will alike be grateful for a review which brings back the past to illuminate the present.

2. Goodman, N. M. and Morris, C. *Proc. R. Soc. Med.* 1940, **33**, 15.

Annotations

INFECTION AND FŒTAL MORTALITY

Of late years increasing attention has been paid to neonatal infection. Not long ago in his Ingleby lectures, Prof. Charles McNeil discussed the work in Edinburgh on this subject, and indicated the way in which this cause of death in early life could be attacked mainly by prevention. Work in New York on fœtal mortality takes the prevention of infection a stage further back, so to speak, and is complementary to the studies of McNeil and his co-workers.

Douglas and Stander [1] have devoted their inquiries to infection during long labour. For some years they had been taking blood-cultures from the hearts of stillborn infants immediately after delivery; they were particularly interested in the effects of long labour, and it soon became obvious that most positive blood-cultures were found in infants who had experienced such labour—in which, moreover, there was definite clinical evidence from the maternal side of intrapartum infection. In taking the blood-culture from the infant the skin over the precordium is prepared with iodine and alcohol. A sterile needle attached to a 5 c.cm. syringe is then inserted directly into the heart, and the blood or plasma thus obtained is inoculated into different media and incubated under both aerobic and anaerobic conditions. In one group of 85 infants thus investigated there had been no obvious cause of death. A positive blood-culture was obtained in all, and though in 11 of them other possible causes of death were discovered, it was felt that even in these the bacteræmia may have played a part. The organism most commonly found was an anaerobic streptococcus including facultative strains. Investigations of the blood were also made in babies dying after labours in which there was an obvious cause of death such as intracranial hæmorrhage, congenital abnormality or asphyxia. A total of 140 such babies yielded negative blood-cultures.

In the 85 infants with positive blood-cultures, most of whom showed no cause of death apart from the bacteræmia, the fœtal heart stopped before the onset of labour in 16, during delivery in 20, and during labour but before the actual delivery in 47. The usual autopsy findings in this stillbirth bacteræmia group included maceration, petechial hæmorrhages, and in a few there was pneumonia. Examination of the placenta showed inflammation in 44 (out of the 85), and maceration in 10; it was classified as completely normal only in 15. It is suggested that during long labour organisms present in the vagina became invasive and pathogenic, reaching the fœtus eventually through the placenta. Another probable route is by aspiration of infected liquor. Towards the end of the investigation an attempt was made to use the sulphonamide group of drugs to control maternal infection and thus fœtal infection in long labour. Encouraging results were obtained when the drug was given at an early stage before the development of fever and vaginal discharge. It was also found, from an analysis of the results, that operative procedures aimed at speeding up delivery in long labour gave poor results for mother and child. Spontaneous delivery is better.

These findings are of great interest in relation to some of the mysterious cases of stillbirth. Hitherto it has been accepted that infections reaching the infant through the placenta are limited to syphilis and in rare instances tuberculosis. The fact that bacteræmia and on pathological evidence septicæmia in the fœtus may result from intrapartum maternal infection indicates lines on which prophylaxis may develop.

1. Douglas, R. G. and Stander, H. J. *Amer. J. Obstet. Gynec.* 1943, **46**, 1.

THE CHANCE FOR GENERAL PRACTICE

"Change and decay in all around I see" is the natural response of the pessimist to any modification of his environment. In the presidential address last week to the section of epidemiology and state medicine of the Royal Society of Medicine, Sir Weldon Dalrymple-Champneys, whom none could call a pessimist, implied that change is not irrevocably wedded to decay: sometimes it is a sign of growth—though of course it may be hard for the contemporary observer to guess which he is looking at. He reminded his hearers of the misgivings among doctors in 1911 about the National Health Insurance Act. Yet now, he said, the system is so firmly established in their affections that a large section of the profession seems to think its extension the best way of providing a comprehensive medical service. As a result of the state care of children and expectant and nursing mothers, supervision of the family is split up—unfortunately he feels; and he believes that the ideal is continuous medical supervision of the individual by the same person. The mistrust shown in 1911, and the failure of the family doctor to take a fuller part in the health services provided by the state, he attributes largely to the failure of medical education to keep pace with the swing towards preventive medicine. He neatly compared the airman who spies the enemy afar off, and the radiolocator who spots him long before he comes into sight, with the medical student, his contemporary, growing skilful in the discovery of the first glimmerings of ill health.

In the past medicine has often fallen into decay, the wisdom of a civilisation often being lost for centuries. It is not impossible that this might happen again: it nearly happened in Germany in 1940, said Sir Weldon, under the tyranny of Nazi ideas. Decadence usually coincides with over-specialisation on insufficient knowledge, and the only sure defence against over-specialisation, he holds, is to give the general practitioner a dominant share in the care of the patient, and to fit him for the task. That the general practitioner should "turn a blind eye to the opening stable door, waiting until the horse is loose to start chasing it" is not only contrary to the traditions of the profession but contrary to common sense. He was not suggesting that the family doctor should be an expert on environmental hygiene, though he should understand its principles; or an epidemiologist, though he should be familiar with the ways in which infectious diseases are transmitted; but he ought to know three things: his patient's heredity and environment including his circumstances at home and at work; his medical history and present condition; and the agents that can be invoked to restore him, whether methods of treatment or organisations. He believes that the general practitioner must be established surely as the guardian of the family, and his hand must be strengthened in every possible way by the weapons of modern science and state organisation: with this support he has a chance of occupying a key position in medicine and the state, to everybody's benefit.

TRYPTIC DIGESTION OF LIVING TISSUES

It has always been a puzzle why the intestine does not digest itself with all the medley of enzymes which it secretes, and the failure of trypsin to attack bacteria is remarkable considering how much more easily it can digest mammalian tissues. For part of the puzzle Dragstedt [1] has now suggested a solution which has attractive points. It seems that one of the actions of trypsin on mammalian tissues is to liberate histamine from them, and it has been found that a subcutaneous injection of trypsin, too weak to bring about local tissue digestion, can be made to do so if histamine is injected at the same time. Dragstedt's

1. Dragstedt, L. R. *Science*, 1943, **98**, 131.

view is that trypsin first liberates histamine, and that this in turn so disorganises the local blood-supply that the cells lose their vitality and become digested. Bacteria are avascular and insensitive to histamine, and hence retain their vitality even in the presence of concentrations of trypsin that would be lethal for mammalian tissues.

As Dragstedt himself is careful to point out, this hypothesis does not explain why healthy living cells are not digested by trypsin, and the resistance of the intestinal mucosa must remain for the present one of the mysteries of physiology; but it does offer an explanation of the relative susceptibility of vascular tissues, and hence eliminates any necessity of postulating that bacterial protoplasm has developed special tryptic resistance.

THE MALTA EPIDEMIC OF POLIOMYELITIS

NOT long ago poliomyelitis was regarded as a droplet infection with the virus passing from the nasal mucosa via the olfactory nerves to the susceptible motor nerve-cells in brain and spinal cord. It was, however, found difficult to reconcile the autumn incidence of poliomyelitis with its being a respiratory infection. At last week's meeting of the neurology section of the Royal Society of Medicine Prof. S. P. Bedson reviewed present opinion about how the disease is conveyed. For many years Kling from epidemiological data, and Toomey from experimental evidence, have been strong advocates of an intestinal mode of spread. The failure of zinc sulphate sprayed into the nose to protect against infection in the Toronto epidemic, and the absence of lesions in the olfactory lobes of fatal cases, were points against the nasal entry of the virus. Recent American work has shown that the virus can be readily recovered from the fæces of clinical and abortive cases, and of intimate contacts, and also from sewage effluents of hospitals where there are infected children. A cynomolgus monkey, infected by spraying the virus into the mouth after the olfactory route was blocked, showed lesions severest in the ganglia of the 9th and 10th nerves whose branches supply the oropharynx. Tonsillectomy in children exposed to infection may be followed by the highly fatal bulbar form of the disease. This, and other evidence, indicate that the principal portals of entry of the virus are the oropharynx and the gastro-intestinal tract, and that the vehicle of spread is probably contaminated food, milk or water. A concomitant droplet spread is not ruled out, but the new knowledge must obviously mean a reorientation in our measures for controlling the infection.

Later in the same discussion Prof. H. J. Seddon described, with many illustrative photographs and charts, an epidemic of poliomyelitis which occurred in Malta between November, 1941, and February, 1942, involving some 400 Maltese children and about 60 British and Dominion troops. In Malta the infection is endemic with only a few notified cases each year. The epidemic wave began at a time of great upheaval and distress in the island, when it was more or less isolated. It broke out first among the native children about Nov. 15 and gradually reached its height in mid-December. Over 90% of the clinical cases were in children under five years, with the peak in the second year and few cases under three months of age. Case-fatality among the children was 3·5% and among the affected troops 17%. Only 3 clinical cases were detected among adult Maltese. Of possible predisposing causes neither overcrowding nor malnutrition seemed to play an important part. Instances of case-to-case infection were rare. A possible significant factor was the use of untreated sewage as fertiliser during the autumn of 1941 and Professor Seddon wondered if the epidemic could have been water-borne. The lumbar section of the cord was the most frequently affected. There were 27 cases of abdominal paralysis; cases of facial paralysis were usually associated with paralysis of a limb; and there were some cases of bulbar paralysis. Considerable ingenuity was needed for the preparation of splints and apparatus for remedial exercises. Crippling occurred in a quarter to a third of the cases.

Contributing to the discussion Sir Arthur MacNalty dealt with his own experience of respiratory and intestinal modes of spread; Dr. F. E. Camps gave some details of an outbreak in Essex which was possibly food-borne, and Dr. Agius Ferrante, in describing some of the early clinical features in the Malta outbreak, stressed the importance of periodic flushings of the face, abdominal colic and uneasy micturition. Replying to questions Professor Seddon said that the weather at the time was like our early autumn, that flies were prevalent, that many of the affected breast-fed children were getting supplementary feeds, and that the relief food-supplies did not come until after the epidemic had begun.

BLOOD-PRESSURE AND OLD AGE

WHAT constitutes "high" blood-pressure is a question whose importance increases as the population grows older. Few would now rely on the old dictum that the normal systolic blood-pressure, expressed in mm. Hg, equals 100 plus the patient's age expressed in years. In an investigation of over 10,000 healthy subjects, Robinson and Brucer [1] contend that at any age 120/80 mm. Hg is the upper limit of normality. Analysis of their figures, however, suggests that this is not true for old age. Only 189 of their 7478 men were over 65, and the statistical method used resulted, when aged subjects are taken at random, in the exclusion of over 60% of this group. Fresh light is thrown on the problem by Russek [2] who studied the blood-pressure of 1000 retired seamen between the ages of 60 and 95, residents in a home for aged mariners and nearly all of Scandinavian descent. He found that the average systolic pressure rose from 147 mm. Hg in the 60–64 years age-group (120 cases) to 160 mm. Hg at 85–95 (104 cases); the pulse-pressure rose from 65 to 74 mm. Hg in the same period, whereas the diastolic pressure only rose from 82 to 86. Pressures below 150/95 mm. Hg he classified as "normal"; when the diastolic pressure exceeded 95 he called the condition diastolic hypertension; and the association of a systolic pressure over 150 with a diastolic under 95, he described as systolic hypertension. On this basis he found that the percentage of normals decreased from 67 in the 60–64 age-group to 34 at 85–95; of the entire series 50% were normal. The incidence of systolic hypertension rose progressively with age from 17% to 38%, and accounted for 28% of the total, while the incidence of diastolic hypertension rose from 16% to 28% and accounted for 23%. More than a third of the subjects over the age of 75 had "systolic hypertension" and an analysis of mortality figures showed that their expectation of life was much the same as for "normal" subjects. The prognosis of "diastolic hypertension," on the other hand, was very different.

These findings are comparable with those obtained in two independent inquiries into the blood-pressure of Chelsea pensioners. In 1922 Thompson and Todd,[3] examining 102 pensioners aged 75 to 92, found that in 72 the systolic pressure was less than 170 mm. Hg, while in 70 the diastolic range was 50–89. Twenty years later Howell[4] reporting his observations on 120 pensioners aged 65 to 92, said that their mean blood-pressure varied from 149/80 in the 60–64 age-group to a maximum of 166/87 at 75–79, falling again to 147/79 at 85–92. In other words a rise in the systolic blood-pressure seems to

1. Robinson, S. C. and Brucer, M. *Arch. intern. Med.* 1939, **64**, 409; see *Lancet*, 1939, ii, 986.
2. Russek, H. I. *Amer. Heart J.* 1943, **26**, 11.
3. Thompson, R. J. C. and Todd, R. E. *Lancet*, 1922, ii, 503.
4. Howell, T. H. *Brit. Heart J.* 1942, **4**, 143.

be physiological in old age, but the diastolic pressure rises more slowly and may even fall. Russek[2] found that the diastolic pressure varied little after the age of 65. On Robinson and Brucer's view that 120 mm. Hg is the normal systolic pressure at all ages only 13% of Russek's 1000 sailors would have qualified as normal. On the other hand Russek's finding that the average diastolic pressure for normals and those with systolic hypertension was only 78 mm. Hg supports the suggestion that hitherto the upper limit of normality for diastolic pressure has been set too high.

ELECTRO-ENCEPHALOGRAPHY IN EPILEPSY

Lennox and his colleagues[1] have published a survey of their electro-encephalographic findings in epilepsy. They deal with records from 1000 adult controls and 1260 epileptics of all ages selected at random from private and clinic patients and comprising, therefore, a rather milder type of the complaint than would be found in institutions. Focal EEG abnormalities are not considered in detail, but focal records are included in the statistics. EEGs are classified as paroxysmal (those showing abrupt and specific alterations of pattern), very slow and very fast, moderately slow and moderately fast, and normal. The determining rates for the slow and fast groups are adjusted for younger patients, and where there is a mixture of slow and fast frequencies the predominant rate is selected for the purpose of classification.

These workers divide the paroxysmal records into three groups: (1) petit mal and petit mal variant, (2) psychomotor and grand mal types, and (3) spikes. Though this nomenclature of EEG records according to clinical type has been criticised [2] they vigorously defend it; they claim that different types of clinical seizure are associated with consistently typical EEGs and that when the same type of paroxysmal pattern is found in inter-fit records it is both logical and convenient to name it by the clinical type with which it is associated, especially as it almost always reproduces the pattern obtained in a seizure in the same patient. Much of the difficulty has arisen over clinical definition. The term "petit mal" they limit to attacks where there is transient loss of consciousness without tonic spasm; if there are convulsive movements these consist of 3 per sec. clonic jerkings of eyelids, head or arms. They say that if petit mal is taken to include any sort of short or mild attack, confusion will result; but if we accept this view, there must surely be many epileptic fits which do not readily fall into any of the authors' three categories. The further claim is made that the three types are marked off not only by clinical manifestations and EEG records, but also by a tendency to appear and disappear at certain ages, a sex-incidence, a differing reaction to drugs and a different relation to biochemical states well exemplified by the effect of over-ventilation, or of blood-sugar alterations, on clinical petit mal and the wave and spike records.

In the summary of results the frequency records (as distinct from the paroxysmal) show in control subjects a simple curve with the node at the 10 per sec. rate, whereas the epileptic curve is binodal, with nodes on the fast and the slow sides. In the paroxysmal records adult epileptics appear 33 times as often as the controls, and in very fast and very slow records 20 times as often. The 3 per sec. wave and spike formation is found in 77% of patients with a history of petit mal, in 6% of epileptics without such a history, in 3·5% of relatives of epileptics, and in only 0·2% of non-epileptic patients and normal controls. Some type of paroxysmal discharge occurs in 51% of epileptic children, 29% of epileptic adults, 6% of relatives of epileptics, 1·2% of patients with organic neuropsychiatric conditions (cerebral trauma, tumour, abscess, vascular disease, syphilis) without fits, 0·5% of patients with functional neuropsychiatric conditions (schizophrenia, mania-depression, migraine), and 0·9% of normal controls. Taking very fast and very slow frequencies, as well as paroxysmal records, as indicative of epilepsy, it is concluded that a routine EEG is of great diagnostic value in about half the patients with a history of seizure.

1. Gibbs, F. A., Gibbs, E. L. and Lennox, W. G. *Arch. Neurol. Psychiat.* 1943, **50**, 111.
2. Finley, K. H. and Dynes, J. B. *Brain*, 1942, **65**, 256; Jasper, H. in Penfield and Erickson's Epilepsy and Cerebral Localisation, 1941, p. 415.

LIVE VERSUS KILLED TYPHUS VACCINES

THE relative merits and demerits of typhus vaccines made from live and killed rickettsiæ have been much discussed of late. A comprehensive account of them was recently given by Biraud, of the Epidemiological Intelligence Service at Geneva[1]; but Dyer,[2] one of the foremost typhus experts in America, has been quick to take Biraud to task for championing the use of live-virus typhus vaccines. Another contribution now comes from Clavero and Gallardo, of the Instituto Nacional de Sanidad, Madrid.[3] These workers found that one of the rickettsia strains isolated during the 1941 epidemic of louse-borne typhus in Madrid, and maintained by passage in the developing chick embryo, had lost its virulence for laboratory animals but retained its immunising power. These findings were obtained in experiments on guineapigs and monkeys (*Macacus sylvanus*) and in the latter species use was also made of the Weil-Felix and the Giroud tests as criteria of induced immunity. Though the number of animals in the experiments was not great, the authors felt that their results justified a preliminary report.

It will be remembered that live-virus vaccines have been employed on a large scal by French workers in North Africa, but not elsewhere. These vaccines were made from rickettsiæ of flea-borne or murine typhus, which is much less severe than the epidemic or louse-borne variety. Nevertheless there have been serious mishaps when the vaccines were given to subjects who were more susceptible to typhus than is the indigenous population of North Africa. The live-virus vaccines of Blanc (biliated flea-virus) and of Laigret-Durand (mouse-brain) contain rickettsiæ which are not attenuated and may produce vaccinal murine typhus if the dosage is slightly too strong, or fail to give protection if the dose is slightly too small. The attenuated strain of the far more dangerous louse-borne virus, which Clavero and Gallardo now propose using instead of the murine virus, is not likely to commend itself to opponents of the employment of a living typhus vaccine. Some years ago Cox[4] observed that rickettsiæ from yolk-sac culture may lose their virulence and retain their immunising power, but this discovery did not lead to the introduction of such cultures as live-virus typhus vaccines.

Sir ERNEST GRAHAM-LITTLE has been elected chairman of the Parliamentary Medical Committee in place of the late Sir Francis Fremantle.

1. Biraud, Y. *Bull. Hlth Org.* LoN, 1943, **10**, 1.
2. Dyer, R. E. *J. Amer. med. Ass.* 1943, **122**, 828.
3. Clavero, G. and Gallardo, F. P. *Revista de Sanidad e Higiene Pública* (Madrid), June, 1943.
4. Cox, H. R. *Science*, 1941, **94**, 309.

TEMPORARY TONIC MOTOR PARALYSIS.—Major G. DE M. RUDOLF informs us that a paper with this title, dealing with a condition which he believes has not hitherto been described, has been deposited in the library of the Royal Society of Medicine, Wimpole Street, London, W.1. This paper may be consulted by any who are interested, but "as the condition is probably of a psychological nature, it is considered unwise in the national interests to publish a description of it until after the close of hostilities."

Special Articles

PHYSICAL MEDICINE: ITS SCOPE AND DUTIES

LORD HORDER'S SURVEY [1]

THE formation of the British Association of Physical Medicine comes at an appropriate time. We are about to face, in grim earnest, the problems that have to do with reconditioning and refitting physically, mentally and spiritually, the men, women and children of the nation, injured in all these aspects by a life and death struggle against a sporadic outburst of barbarism. In the general scheme by which this task may be accomplished medicine has a very great part to play and a great deal of its contribution will inevitably lie along the road of physical medicine.

A description of physical medicine recently propounded by Brigadier Howitt makes an appeal to me. He gives it three functions: (1) the achievement and maintenance of physical fitness; (2) the diagnosis and treatment, preventive and curative, by physical means, of disease and disability of the locomotor system; and (3) the physical selection, training and reinstatement of personnel in industry and in the Armed Forces.

The aims of our association closely correspond with these functions, for the first of them is "to encourage the study of the action of physical agents and their application in the promotion of health; in the prevention and treatment of illness and injury; and in the restoration to fitness."

FITNESS

If this be accepted as our brief, to what cases does it apply? It applies to keeping the fit, fit, which is only another way of stating the case of "positive health" of which, these days, we hear so much. It also applies to making the near-to-fit, quite fit. Both these activities are aspects of preventive medicine, to which the modern reorientation of medicine has been directed. The days of great epidemics which mowed down the people in swathes have disappeared, and there is time for medicine to turn its attention to the individual citizen—time to consider what Herbert Spencer had in his mind when he said that "to be a race of good animals is the first condition of national prosperity." The tempo of our efforts at achieving national fitness, bodily and mentally, has just at present been speeded up. Never was the individual citizen so marked down for hygienic attention as now. But when the stimulus of the war is over, what is to be the incentive to fitness then?

There is no doubt that we have let our bodies go; our civilisation had literally gone to our heads. And our heads weren't standing it too well, either: there were quite a lot of folk bothered by anxiety and fear and sleeplessness and odd tricks played by their nerves. So let us give the body a chance for a bit, and don't let us think we are wasting time in doing so. In this field physical medicine must play an important part—indeed the most important part. It must lead and guide and control.

APPARATUS, EDUCATION AND RESEARCH

The association's brief also includes control of the whole range of those physical measures of diagnosis, prognosis and treatment which go conveniently by the name of physiotherapy. Into this group come skilled manipulation, massage, gymnastics, remedial exercises, balneology and other forms of hydrotherapy, the application of light and heat and cold in various ways, other kinds of ray therapy and electrical methods. It is in connexion with this object of the association that the further aim "to evaluate apparatus and methods claimed to be useful in physical medicine" will prove of help, both to our profession and to the public.

The test of all claims to add to the armamentarium of the doctor is the ability of their exponents to state pathology clearly and to demonstrate that the method or apparatus follows recognised principles of science in its construction and its action. The public have great faith in apparatus; they think an instrument cannot lie. We have to save them from themselves. We must resist the temptation to play up to their demand for the machine or to give them the physiotherapist equivalent of the bedside manner.

And here we must consider the spas and health resorts of this country. Their status, and the position which they have so far taken in physical medicine, are notoriously unsatisfactory. Dr. C. W. Buckley has just compared the use made of spas by our Soviet Allies with ours at home—much to our discredit. He thinks that we must be much more democratic in our outlook upon spa possibilities. He speaks of the need for education of the state, education of the doctor in the spa, education of other medical practitioners and perhaps finally education of the general public in the uses and value of spas. Here indeed is pertinent work for this association.

Our brief covers efforts at correcting deformities, both congenital and acquired; the overlap between this association and the work of our orthopædic colleagues is therefore considerable and we shall look to them for strong support. We also cover much that is known, and perhaps still more that is unknown, in the ætiology and treatment of the chronic rheumatic diseases, in which we have close affinity with the Empire Rheumatism Council.

In some fields of medicine we have gone ahead with treatments in the absence of exact knowledge of the causative factors (as in cancer) or lacking specific therapy, though the causative factor is known (as in tuberculosis). In cancer a form of physical treatment (radium and X-ray therapy) has brought us relatively good results. In tuberculosis a series of physical methods have changed for the better the outlook for the chronic case. Let us bear these things in mind when we remember that some of the ætiological factors, whether microbic or metabolic or neurogenic, are still obscure in relation to many cases of rheumatic disease.

There is scope and need for research in methods of physical treatment, and this issue is closely bound up with education. Our constitution stresses the importance of undergraduate and postgraduate training in the principles and practice of physical medicine, and exists to encourage both of these. We hold a brief for improving the status of the physical medicine specialist and for securing a diploma in physical medicine. The endowment of one or more university chairs would help us further towards attaining our aims than anything else.

Finally, to educate the community in the value of physical medicine is a big task; but we must not hesitate to undertake it. It includes close coöperation with the educational authorities, with schools and with industry.

THE OPENING PROSPECT

We have outlined our strategy; our tactics have yet to be considered. The very fact that we are on the verge of great changes in our national health administration necessitates caution, and the association is but newly born.

Nearly twenty years ago, in opening the winter session at the Leeds School of Medicine, I chose physical medicine as my theme and urged the formation of a parent society. Wherever, whenever, since then, I have seen authentic, valid and scientifically controlled efforts at developing particular aspects of this great branch of medicine I have done my utmost to further them. Not all my causes on behalf of physical medicine have been won, but now, as the result of your loyal and effective help, and your determination to sink individual views and preferences in the common interest, there has been formed the British Association of Physical Medicine. Its future lies with you.

1. Extracts from Lord Horder's presidential address at the inaugural meeting of the British Association of Physical Medicine held in London on Oct. 20.

PROPHYLACTIC SULPHONAMIDES IN JUVENILE RHEUMATISM.—In view of favourable American reports, the education committee of the London County Council have arranged that prophylactic treatment with sulphonamide shall be given to 100 selected rheumatic children attending supervisory centres. These centres are staffed by physicians experienced in rheumatic disease in children and the results will be controlled. None of the children chosen will be receiving treatment elsewhere, and the consent of the parents will be obtained. Blood examinations will be made regularly so that any case of granulopenia will be discovered early.

WOUND HEALING

THE CAMBRIDGE CONFERENCE

THE 55th conference of the Society for Experimental Biology, held from Sept. 22 to 24, took the form of a symposium on wound healing. No meeting of similar size with this as its subject had been held in England since that convened by the Medical Research Council in November, 1940; and comparison of the two demonstrates steady, if nowhere spectacular, advance in understanding of the biological principles of wound healing and how they may best be put into practice. Two contributions in particular—the local application of sulphonamide powders for controlling wound sepsis, and the use of penicillin—which were reported at the earlier meeting in the laboratory stage of investigation, have now been widely received into clinical practice. Mr. E. CHAIN, PH D (Oxford) and Dr. MARY FLOREY (Oxford) reviewed the chemistry and the present clinical standing of penicillin; and their evidence showed that in all respects, except large-scale manufacture, penicillin has fulfilled its earlier promise. Dr. F. HAWKING (London) gave a practical-minded review of the behaviour of sulphonamides in infected wounds and the means by which their effects could most economically be secured.

The importance of vitamin therapy in the systemic treatment of wounds was recognised before the present war; but, as Mr. L. J. HARRIS, D SC (Cambridge) pointed out, only vitamins C and D were known to have a special significance for wound healing. Even so, no special nutritional principles are thought to be involved: the action of vitamin D in securing calcification, and of vitamin C in promoting the activity of all classes of formative cells, is essentially the same in wound repair as in physiological development. Mr. P. D. F. MURRAY and Dr. E. KODICEK (Cambridge) and Mr. G. H. BOURNE, D SC (Oxford) described their histological observations on the effects of graded vitamin-C deficiency on the maintenance and healing of bones and soft tissues in the guineapig. Their work served to emphasise the reality of subclinical deficiencies: there was every reason to suppose that lack of vitamin C had a significantly harmful effect in man on dietetic levels at which the clinical signs of scurvy do not appear.

The subject of general metabolism during wound repair was adequately, but—in view of the biological nature of the conference—not exhaustively discussed. Dr. D. P. CUTHBERTSON (Glasgow) and Dr. R. J. ROSSITER and Mr. E. J. CLARK (Oxford) described clinical and laboratory investigations on protein metabolism during wound healing, particularly after burning; and these were supplemented by a description of histological changes in burned skin by Mr. E. H. LEACH (Oxford). It was not certain, Dr. CUTHBERTSON said, whether the loss of N, S, K, and P in the "flow" phase of metabolism after burns and other injuries is due to depressed general anabolism or to an increased protein katabolism: high-protein diets did not make good the loss; nor apparently did preliminary periods of protein inanition accelerate it. But it was a reasonable inference that in any condition involving debility through tissue loss the patient's diet should contain gradually increasing quantities of protein—particularly animal protein, for its high content of cystine and methionine.

At the outset of the meeting, Mr. E. N. WILLMER (Cambridge) had insisted that wound healing was fundamentally a cellular process. It depended on a delicate equilibrium of cellular activities which varied with the size and nature of the lesion, and which—in attempts rashly to stimulate one or to suppress another—we might easily upset. He agreed with Prof. PATERSON ROSS, FRCS (London), who defined the clinical fundamentals of wound treatment, that the natural process of repair required not acceleration but only an opportunity to exert itself in the most effective way.

Contributions on the cellular aspect of wound healing naturally took the lion's share of the contributions; and it would have been wrong to expect each one to lead directly to clinical innovations. Miss HONOR FELL, D SC, and Mr. J. F. DANIELLI, DSC (Cambridge) led the way to an understanding of the biochemical background of at least one formative process in wound repair, by producing evidence of the circumstantial relationship between the presence of alkaline phosphatase and the formation of collagen fibres. Mr. M. ABERCROMBIE, D PHIL (Birmingham) described the relationship between cell movement and cell proliferation in the union of severed nerves—a study of particular importance for biologists, who have long recognised the significance of this cellular relationship in the earliest stages of development. Mr. J. Z. YOUNG (Oxford) translated the observed behaviour of axon protoplasm in the central and peripheral stumps of divided nerves into terms of colloid chemistry, and showed how the nucleus of the neuron might maintain the integrity of the axoplasm by keeping its long fibre-like molecules in their correct morphological alignment. Mr. A. H. S. HOLBOURN (Oxford), in a similar way, sought the cause of the distribution of brain lesions in the mechanics of shear stresses (see *Lancet*, Oct. 9, p. 438). Experimentally, and in clinical practice, lesions occurred in those regions of the brain where unilateral tensions and compressions exceeded a certain critical value. Dr. DOROTHY RUSSELL (Oxford) said that although healing processes in brain wounds are fundamentally similar to those following injuries to other tissues, the extent of the initial necrosis and ultimate scar-formation are relatively greater; and because of the superficial position and vulnerability of the vessels supplying the cerebral convexities, only those chemotherapeutic agents should be used which had a minimal damaging effect on tissue—notably penicillin solutions.

A contribution from Lieut. J. M. BARNES (Oxford) on vascular changes after injury bridged the gap between the cellular and the systemic line of approach. He described the significance of reflex arterial spasm after injury, and particularly emphasised the importance of interfering with the delicate and unstable wound circulation as little as possible.

Plastic surgery is that department of medicine in which the clinician has always been ahead of the laboratory worker; not only in recognising the biological principles of wound repair, but also in putting them effectively to work. Mr. RAINSFORD MOWLEM, FRCS (London) impressed the conference by showing that bone-grafts consisting of loosely packed chips of cancellous bone will heal promptly, soundly, and in the correct morphological relations, and maintain the highest resistance to infection. He contrasted their behaviour with that of massive saw-cut grafts of compact bone, which were commonly used on the faulty assumption that bone, like tendon or fascia, is an inert tissue. The concept of cellular survival should regulate the plastic repair of bone. Dr. H. T. BARRON (London), reviewing his experience of 800 cases of plastic repair by skin autografts, described the principal variables of graft healing and the probable biological explanation of each. Dr. A. GLÜCKSMANN (Cambridge) had examined the histogenesis of scar keloids in 70 of Mr. Mowlem's and Dr. Barron's cases. He had found evidence that keloids were essentially fibrosing granulomata, not true fibromata; and that they started from an originally localised—though ultimately diffuse—reaction towards extrinsic or intrinsic foreign bodies in sensitive patients. In experimental and clinical studies with Dr. T. GIBSON (Glasgow), Mr. PETER MEDAWAR (Oxford) had found striking circumstantial evidence for the astonishingly neglected theory that skin homografts fail in man, and in other mammals, because they generate an active immunity in their recipients. There could be no question of using skin homografts in clinical practice, other than as wound dressings, until—if it were ever possible—the genetic background of tissue compatibility had been worked out.

The conference might well have concluded by further reflection on the lines upon which Prof. H. A. HARRIS, MD (Cambridge) opened it. The problems that John Hunter described on his return from the Peninsula were much the same, he said, as those we face today; and in the 14th century John Aderne formulated principles of wound treatment to which we have little to add. There was a continuity, in medical history, of the central problems of scientific treatment; periodic wars gave them peculiar urgency, but not novelty. Humility, born of this sense of history, may not be a powerful stimulus to the prosecution of scientific work; but it should govern its appraisal. At all events, it could in this case be qualified by a reasonable satisfaction at some definite scientific achievements.

TEACHING OF PSYCHIATRY

THE approach to the psychological and social aspects of disease has changed profoundly in the last twenty years; and the change is reflected in the two interim reports just presented to the Royal College of Physicians by their committees on psychological, and on social and preventive, medicine. The implications of the latter report are discussed in our leader (p. 546); the psychological report, which is complementary to it, recognises that psychiatry has grown beyond the stage at which the student's needs could be served by a dozen lecture-demonstrations at a mental hospital: his training in it must now rank among the most important parts of the curriculum.

The report suggests that every teaching school should have a department of psychiatry for outpatients and inpatients with an adequate teaching staff—"as a minimum, a psychiatrist, a psychiatric registrar, a resident, a number of clinical assistants, a psychologist trained in intelligence testing, psychiatric social workers and secretarial assistants." Psychiatry would thus be represented by a complete unit. The committee, moreover, look forward to the day when there will be a professorial chair of psychiatry in every medical school. The clinician attached to the department of social and preventive medicine should work in coöperation with the department of psychiatry as well as with the other departments of the hospital.

The student, they consider, should take a course in normal psychology towards the end of his second preclinical year, and an introductory course in the psychiatric aspects of clinical work at the beginning of his first year in the wards. Throughout the clinical period he should take a systematic course in psychiatry. The syllabus cannot be rigidly laid down since it must be flexible enough to suit different hospitals, but they feel that the course of lectures and demonstrations should be amplified by seminars and discussion groups covering the whole range of mental disorder and mental deficiency. The course would include meetings in the outpatient departments and wards of the hospital, at local psychiatric centres or admission wards in mental hospitals, and visits to mental deficiency institutions, child guidance clinics and pædiatric outpatient departments. The student should spend three months as a clerk in his own hospital psychiatric department during his first or second clinical year, combining the post with work in one of the other special departments—preferably the department of neurology. He should examine and make case notes on at least 6 psychotic and 20 neurotic patients.

A suggested systematic course covers principles of diagnosis, general causes and pathology of mental illness, principles of prevention and treatment (physical, psychological, and social), toxic and organic syndromes, affective syndromes, schizophrenia, psychopathic personality, hysteria, obsessional syndrome, other psychological aspects of physical disease, children, mental deficiency and forensic psychiatry. It is suggested that during the last clinical year a short resident period in a mental hospital or a clinical clerkship in an observation ward might form part of training, coupled with domiciliary visits in the company of a psychiatric social worker. The committee attach much importance to the teaching of mental deficiency and advise that six of the lecture-demonstrations in the systematic course should be on this aspect of psychiatry and that at least two of them should be conducted at an institution for mental defectives.

Finally the committee propose that the student's knowledge of normal psychiatry should be tested by examination at the end of the preclinical period, and that in the finals there should be a separate examination in psychiatry, to be taken either at the end of the clinical period or earlier.

BRITISH PÆDIATRIC ASSOCIATION.—The September issue of the *Archives of Disease in Childhood* contains two reports by this association, one on the early diagnosis of tuberculosis in childhood, and the other on arrangements for newly born babies in maternity hospitals. Copies of these reports may be obtained from the acting honorary secretary, Dr. Donald Paterson, 27, Devonshire Place, London, W.1.

In England Now

A Running Commentary by Peripatetic Correspondents

SOME of your correspondents seem to me ignorant of the facts of life, as applied to their profession. There was the one who maintained that we are "probably the best educated, most intelligent, most altruistic and most worldly-wise group in England today." No Sir, I am afraid we are neither well educated nor particularly intelligent. The old tradition still holds good that if parents are in doubt how to dispose of their more stupid offspring, the only profession in which they can be assured of a guaranteed job is medicine. Any experienced teacher will agree with me that the student who cannot pass a qualifying examination in medicine is mentally deficient. Those members of the profession who have outstanding intellectual ability are, with a few obvious exceptions, to be found in the ancillary sciences such as physiology and biochemistry. Speaking generally there is no intellectual satisfaction to be obtained in the practice of medicine (or surgery)—emotional satisfaction, yes, and even spiritual satisfaction for some, but the doctor who tries to run his practice on a rational and logical basis will soon find himself in the workhouse. Then, to talk as if a state medical service means the end of all personal initiative and freedom, while the present system of practice is a valhalla of complete freedom, has no relation to reality. What freedom does the average GP or consultant possess? What consultant dare refuse a call, even at the most inconvenient moment? What GP dare ignore a summons from a patient? No, the present archaic system is the acme of slavery and serfdom. Either from financial reasons or simply in order to build up a reasonable practice the practising doctor of today has no semblance of liberty of action.

* * *

If it must be Sicily or North Africa give me Sicily every time. Nobody seemed to be taking much notice of us as we tripped up the beach from our invading craft. That nonchalant air which characterises the British soldier as he steps out on a foreign strand, and which you have doubtless noticed in the news reels, is quite genuine. It seems the most natural thing in the world to Tommy Atkins that he should trail away into Sicilian orange groves and "brew up" as though he were on Salisbury Plain. I don't know whether it was the custom in the last war, but when a meal or a hot drink is ready for serving, the cookhouse staff set up the cry, "Tea up"; or in the case of a set meal, "Come and get it," and the invitation is accepted with alacrity by all. But if we were casual in our demeanour as invaders, the conquered people were even more so. True there were no "tears of joy," but there was not the slightest sign of resentment; and many of the peasants gave us a smile and the V sign with their fingers as they passed by on their carts and buggies. The flight of Mussolini and his gang of thugs was a matter of great satisfaction to them, and many anti-fascists had seized the opportunity to deface the silhouette of Il Duce which appeared on nearly every white wall in the villages we passed through. Sicily, at all events, seems to have had a raw deal from the fascist administration. The villages, picturesque and bizarre when seen in the distance, are tawdry and squalid on closer inspection. Sanitation is primitive in the extreme, and the dwellings emit a disgusting smell which drifts well beyond the boundaries of the place. On the other hand, the picture postcards are exceedingly attractive. Furthermore, the inhabitants are fortified by high-sounding extracts from Mussolini's speeches plastered on the walls of nearly every room of the schools and other public buildings. Exhortations to work, to multiply, to suffer, and if necessary to fight and conquer, have evidently served as political blood-transfusions for a poverty-stricken population for nearly two decades.

Having reached the new location in which the Unit is to function, one settles down to the job of helping to make the wheels go round, and quickly becomes detached from the foreign background. The avalanche of patients descends on the establishment. The familiar rhythm of working, eating and sleeping is re-established. Etna and its wisp of volcanic smoke fade into the background; the horizon is limited by a broken ring of "GS Doubles"

—as the ward tents are officially described—and the inexorable routine of disposing of the sick and wounded occupies nearly all of one's waking hours. The reception tents are never empty. One MO cannot keep pace with the new arrivals. Constantly stooping over stretchers, which move along from the MO's section to the clerks' department like motor-cars on a moving belt, one writes the gist of the story and findings on the "3118" in staccato English reminiscent of Tidy's *Synopsis* or Hey Groves. What a vast amount of repetitive work! "Right thigh, middle anterolateral aspect, T and T wound, MG bullet. General condition good. Ward S1. Morphine gr. ¼. Evacuate." And *after* the battle, the usual pattern is: "Headache, loss of appetite, vomiting, shivering, sweating, 2 days' duration. Spleen palpable. For blood-film. Start quinine gr. 10 thrice daily. Fluids freely. M1 Ward." In medical units no less than in the combatant, war is characterised by long periods of inactivity and boredom, and short bursts of feverish work. Unfortunately during these active periods, when interest in medicine revives, the volume of the work makes it essential to concentrate on disposal of cases rather than a detailed study of their medical aspects. It is imperative to perfect the art of spotting the really ill man—the candidate for resuscitation and the probable "MT" who will slip through your fingers unless he gets his quinine intravenously within the hour. Perhaps one tends to underestimate the value of this kind of work. One is inclined to grumble about the contrast between clinical practice in the field and at the base, and one sometimes becomes quite cynical about the high-falutin ideas on what *ought* to be done expressed by old gentlemen in sumptuous general hospitals at home. But in more sober moments one is obliged to admit that under battle conditions the doctors put up a pretty good show: expedience always looms large, but it doesn't eliminate scientific medicine completely.

* * *

"We were recently accused of being pre-1914 in our outlook. However that may be, we still contend that the prime work for women, in that it is only they who are capable of carrying it out, is the begetting (*sic*) of children and the running of the home. We would go even further and add that for the majority of women this is a whole-time job and one which should be recognised as such by the State. Under modern conditions, in this country at least, all women unfortunately are not able to subserve this function and for such we would suggest that there are at least two forms of work which they can do better than men—nursing and teaching of the young. So far as the former is concerned, it seems to be overlooked that no man can make an efficient nurse, whereas, to put it no higher, the average male doctor is just as good as, if not better than, the average female doctor."
—Editorial *St. Thomas's Hospital Gazette*, October, 1943.

My dark unconscious writhes and squirms
To think how woman cheats me.
We must not meet on equal terms
As complementary fellow worms
In case the jade defeats me.

When nature gave this rival twist
To bearer and begetter
She hid it in a jealous mist,
I *must* insist, I must *insist*
That I am far the better.

* * *

I am just returning to life after a go of tonsillitis—about as obviously organic a complaint as you could find—yet no less than three of my ci-devant friends (now struck off) have already brought up the old couvade "joke" against me. I don't know whether there is any truth in the couvade notion, and don't care, but it has got so widely held that an expectant father can't get a blessed thing these days, from ingrowing toenail to cerebral tumour, without being labelled a neurotic dirty dog. Why, a chap I know had the most terrible toothache during one of his wife's pregnancies, and even when the dentist opened a bag of pus bigger than the tooth he was still treated as a pariah.

The Minister of Health has appointed Major William Woolley, MP, to be his parliamentary private secretary, in succession to Colonel Frank Medlicott, who has taken up a military appointment.

Parliament

FROM THE PRESS GALLERY

Pension of RAMC Officer's Widow

ON the motion for the adjournment Mr. QUINTIN HOGG raised the pension awarded to the widow of Mr. William Bremner Highet, a surgeon of Wingfield Hospital, Oxford, who since the beginning of this war had acquired experience in dealing with soldiers suffering from nerve injuries. In 1942 he was asked to form a new centre in South Africa for soldiers injured in the Middle East. The post carried with it the rank of major. From the outset, said his colleague in the hospital at Oxford, it was agreed that Mr. Highet should go with the rank of major. But to his dismay he was commissioned as a lieutenant. His medical colleague took up the case immediately with the Central Medical War Committee and with certain Army consultants, Brigadiers Bristow, Cairns and Riddoch. An assurance was given that Mr. Highet's promotion was only a matter of days, and that he would not hold merely the temporary rank of major. Major-General Monro, consulting surgeon to the Army, sent the following letter to Mr. Highet's colleague:

"I passed the letter to AMD 1 with the following comment: 'Highet most certainly would have been classed as a specialist surgeon (neuro-surgeon) and this, I maintain, should have been done before he embarked for S.A. to take up an important post.'"

Mr. Hogg also quoted from a copy of the War Office minute sent by D. P. Stevenson, DADG, from AMD 1, which said: "It is unfortunate that promises were made in writing to this effect"—namely, that Mr. Highet should have a major's appointment—"by Brigadiers Rowley Bristow and Riddoch." The minute went on to show that Mr. Highet was given the rank of lieutenant only because of the technical regulations then in force. The ship in which Mr. Highet was travelling to South Africa was torpedoed and he was drowned. Now his widow was awarded only a lieutenant's pension. The Secretary of State for War, with whom he Mr. Hogg had raised this matter, had admitted that if it was considered that the case justified exceptional treatment it would be possible under the Dispensing Warrant to grant the rank of major from a date prior to that on which the vacancy was filled. The Minister, however, added in his letter that he could not see that there was any question of breach of faith in Mr. Highet's case. Mr. Hogg claimed that an injustice had been done. Any decent employer would have done exactly what he was asking. The word of a subordinate would have been kept. Nobody but the Crown would treat an employee in this way. He doubted whether they were dealing with men so much as bureaucrats, born in a pigeon-hole, swaddled in red-tape, educated at the Treasury, and reaching manhood as a civilian in the War Office. When at last they were removed to another place no doubt there would be written on the tombstone a Treasury minute instead of an epitaph, "Passed to you for further consideration and comment." If this was the way that the Crown treated servants and Sir James Grigg administered his office the sooner he moved from his position the better.

Mr. ARTHUR HENDERSON, Financial Secretary to the War Office, in reply said that he agreed that Mr. Highet was an orthopædic surgeon of great ability who volunteered for service in a special, indeed an important, appointment in South Africa at the request of the War Office. He also agreed that the appointment as such carried with it the rank of major. Mr. Highet had had considerable experience in dealing with nerve injuries and there was no doubt that his services would have been of the greatest value. Mr. Henderson quoted from official correspondence to show that it was made clear to Professor Seddon, Mr. Highet's medical colleague, that on assuming the overseas appointment Mr. Highet would be raised to full specialist status, which carried with it the rank of major. Mr. Henderson had not been able to ascertain whether the contents of this letter were conveyed to Mr. Highet, but he thought they were. He claimed that unless and until Mr. Highet assumed the duties of his post he was not entitled to the acting rank of major. He was quite ready to accept Mr. Hogg's

statement that promises were made by certain officers but they were not carried out before Mr. Highet left for his destination abroad. Sir ALFRED BEIT and Sir PETER BENNETT supported the plea put forward by Mr. Hogg. In reply Mr. HENDERSON said he was somewhat loth to respond to Mr. Hogg because he thought he had made a vicious attack on Sir James Grigg. None the less in view of the strong representations that had been made he would certainly undertake to convey to the Secretary of State the feeling of the House that this case should be given special consideration.

QUESTION TIME

Disease and Famine in India

Mr. R. W. SORENSEN asked the Secretary of State for India what information he had respecting the cholera in Malabar and in other parts of India; whether there was a shortage of drugs and medical supplies for civilian use in India; and what information he had received from the Central Government respecting the spread of disease, assistance needed in combating this, and the approximate deaths to date due to famine.—Mr. L. C. AMERY replied: There have been reports of cholera in various parts of India. I have not so far had any indication of any widespread outbreak or of any special difficulty experienced by the provincial governments concerned in dealing with the outbreaks of this or any other disease. I have not had recently any report of shortage of drugs or medical supplies for civilian use nor any special report from the central government respecting the spreading of disease nor any request from them for assistance in this connexion. As regards deaths due to famine, the government of India report that figures are as yet incomplete and unreliable, especially in respect of the districts, and I am afraid it must be some time before the loss of life can be even approximately stated. It may afford some guide that in Calcutta mortality is reported as about twice the normal for the time of year and that between mid-August and mid-October about 2000 persons suffering from malnutrition have died in Calcutta hospitals.

Diet of British Prisoners in Far East

The Secretary of State for War, in reply to a question, stated that the reports received from the Protecting Power and the International Red Cross Committee regarding conditions in camps in Japan, Korea, Shanghai and Hong-Kong, indicated that prisoners generally were probably receiving a ration not less than that applicable to the Japanese depôt troops; it consisted generally of polished rice with a little flour, vegetables, fish and sometimes a little meat; fruit was sometimes available in Japan and rations in Shanghai had often been supplemented from local supplies by the efforts of local friends or the International Red Cross Committee delegate. But the evidence left no room for doubt that these rations were inadequate to maintain our prisoners over a long period in reasonable health and the Japanese Government had been pressed to remedy its deficiencies in energy value, animal protein, fat, calcium and vitamins. In particular they had been asked to supplement the diet with soya beans (which contain practically all the deficient properties), but they had refused owing to alleged lack of supplies. They had also been urged to issue unpolished rice instead of polished rice, but they claimed that the bulk of the available rice was already polished; some rice bran had, however, been issued.

Medical Man Power

Mr. HENRY WHITE asked the Minister of Health if he would give consideration to the position of industrial areas where there was either a shortage of doctors or an inability to obtain satisfactory relief so that attention could be given to patients; if he was aware of the strain thus placed on the local doctors and the many long periods of waiting endured by the patients; and would he take steps to put into operation some system of transfer that would relieve the pressure and secure a more equitable method of medical attention.—Mr. E. BROWN replied: The Central Medical War Committee and its local committees, in selecting doctors to make up the quota required by the Forces, do their best to maintain an adequate medical service for the civilian population, but I am afraid that in some areas there must inevitably be a heavy burden on the remaining doctors and some inconvenience for the public. For the areas most in need of help, arrangements are being made through the CMWC in accordance with a recommendation of the Shakespeare Committee for the employment of suitable doctors as assistants in general practice. These will be selected mainly from those found unfit for service in the Forces and the powers of direction under the Defence Regulations will be used so far as appropriate for this purpose.

Psychological Examination of Young Women

Mr. RHYS DAVIES asked the Minister of Labour whether he had considered the representations from the council of the Magistrates' Association, stating that they were alarmed at the number of young women sent to prison for failing to comply with his directions and urging that such women should be psychologically examined before they were prosecuted.—Mr. BEVIN replied: The present arrangements provide for such an examination to be undertaken where this seems desirable and I am exploring the possibility of improving the present methods of identifying appropriate cases for special examination.

Rehabilitation of Prostitutes

Mr. H. LINSTEAD asked the Minister whether, as the fact that his department had found in practice that it was useless to direct prostitutes into National Service indicated the need for a comprehensive inquiry to devise constructive measures to deal with the treatment and training of the social and industrial misfit, he would now set up such an inquiry.—Mr. BEVIN replied: I do not think that the difficulties of dealing with the class of person under the National Service scheme are a sufficient reason why I should undertake the suggested inquiry which would raise many social and medical issues extending far beyond the sphere of my department.

Letters to the Editor

CONTRACTING OUT

SIR,—Mr. Lucas Young, in your issue of Oct. 16, analyses the problem clearly enough up to a point. All the difficulties he pictures would undoubtedly arise. But he seems rather to imply that merely to forbid contracting out would prevent or solve them. He writes as if there were something obscure or unreal about that "little something" for which some citizens would wish to step outside the free and equal-for-all comprehensive medical service.

There is no mystery. The citizen would wish, first, to secure for himself half an hour of his doctor's time.—"When can you give me half an hour, doctor? I have something I want to discuss with you." "The clinic is all right," said a young mother who came to discuss weaning problems, "but they only give you two minutes. Yes, literally!"

Second, he would wish to consult a doctor who was not the whole-time paid servant of anyone, and who owed no allegiance to any corporate body, a man responsible solely to him and to his own conscience and free to speak his mind. "They tell me at the hospital . . ." or "The school doctor says . . ."—"so I have come to you to ask your opinion."

Third, he would wish, sometimes, to consult his doctor without the knowledge of friends, relations or neighbours, and occasionally he would have good reasons for desiring a consultation at his own home, though not confined to the house by illness.

None of these, be it noted, is a frivolous extravagance or a foible of the rich. They are all reasonable things to wish for, all have their place in good practice, all are demanded and obtained every day as a matter of course from thousands of ordinary doctors by thousands of ordinary citizens who pay gladly for them according to their means. All would be difficult, some impossible, to obtain from a whole-time salaried service, especially from one based on clinics. Can anyone believe that citizens would not continue to desire these small but sometimes precious privileges; can any doubt what they will do if the service cannot supply them and they cannot contract out? They will go to any practitioner, registered or not, outside the service, who seems able to supply what they miss.

The truth is, of course, that although with good organisation and high taxes the state could in time provide

efficient medical service for every citizen, it can never, by any expenditure or effort of organisation, provide for every citizen the best that private practice has to give; and if everyone must have the same the best must go. The state could provide for every citizen three good meals a day and ensure that nothing worse than second-best beef was ever served. It could never provide for every citizen a meal that a chef would call a first-class supper, and if all must sup alike then a first-class supper must be permanently denied to every citizen. Can we not have the courage to recognise that "the best for everyone" is an idle dream?

I agree with Mr. Lucas Young that the notion of contracting out is an unworkable compromise; but believing as I do that the best should not be sacrificed to the average, and that freedom is worth its heavy price, I hope the citizen who prefers a free man for his doctor will never be made to wish he *could* contract out.

Hampstead, N.W.3. LINDSEY W. BATTEN.

SIR,—The obvious conclusion to be drawn from the first half of Mr. Lucas Young's interesting letter is that those who are not covered by a "state" scheme should join a contributory scheme which would give the full advantages of private practice without the fear of unknown medical expenses. His analogy of medicine with education breaks down on this point, because when a boy is sent to a public school one knows almost exactly what the expense will be, and this is impossible in the case of sickness unless one is covered by some insurance scheme.

If, as suggested in my letter of Sept. 18, the Government subscribed to such insurance schemes for all those who joined, which is democratically just, then much of the argument of the latter part of his letter would lose its weight, as the Government would be making provision even for those in the voluntary scheme, and no-one can imagine that prices and salaries are going to remain static for the next twenty years, so there is always the possibility of revision.

The real question is whether it is good for private practice to continue, and this cannot be supported on the ground that it gives an extra source of income to doctors. The analogy that Mr. Young draws with food is quite apt. Efficient medical attention is essential, but it is neither so essential or so universally required as food. Surely therefore, according to Mr. Young's argument, it is necessary that every citizen should get his food free and standardised even more than his medical attention? But in fact we know this is neither intended nor desirable. We do not expect to live all the time on basic rations, nor do we wish all the time to be compelled to have standardised compulsory medical service. Progress demands that we give the fullest liberty for improvements to be made—luxuries they will be considered at first, just as baths, handkerchiefs and clean linen used to be considered. Before long however the state patients will demand and obtain them. Furthermore "Lady B." is a human being as much as anyone else, and those who do personal medicine know that treatment which is not willingly accepted is seldom so satisfactory as when the patient coöperates. Why then should she be compelled while she is ill, when she is allowed to be free while she is well?—especially if we can so work it that her desire for special treatment may be used to raise the whole standard of treatment for others.

Lady B. may be largely a social problem. But how about the busy civil servant, the company director and many others whose time is valuable to the community as well as to themselves? Are these to be forced, when they have a trivial ailment—which may not be so trivial—to attend a health centre and waste their time waiting their turn instead of asking the doctor to call at a convenient time? Or if, for the public benefit, they are to be allowed this privilege they will not be treated the same as others, and the whole basis of the unified service breaks down. It is probably impossible to make a comprehensive system which shall be absolutely just and logical, but life is not all logical by any means, and the financial standard is one which is well understood and is a moderately rough guide. If those below the NHI limit were also allowed to opt into the contributory scheme it is most likely that many would elect to pay the extra four or five pounds per annum required on top of the government contribution. They would value the extra conveniences of private practice, the avoidance of waiting for relatively trivial attention, the extra comfort of nursing-homes, &c. The doctor might reap some monetary advantage from having such patients, but the great advantage he would gain would be the ability to see a patient without the state being a tertium quid, and the patient would gain the same inestimable benefit of feeling free. (I do not here refer to freedom of choice which could, I think, be as obtainable under a state scheme as in present circumstances.) The danger of all planning, as even the Fabians from their latest symposium are coming to recognise, is that people may lose their freedom, and it is their individuality that a doctor should seek to cultivate as an essential part of their health. And the state should do its utmost to help them in this for the sake of its own political vitality and health: for states can be sick as well as individuals, and mental and moral sickness is even worse and more intractable than physical illness.

Winsford, Cheshire. W. N. LEAK.

SIR,—Mr. Lucas Young pointed out the difficulties of a medical practitioner under a state scheme wherein the whole population is compulsorily taxed to provide the (at present) ethereal boons of state medicine.

He assumes that it might be possible for a patient to pay extra to the state doctor to get a little extra attention. The policy of allowing a panel patient to go to another panel doctor for "private treatment" has always been a doubtful one, and it is presumably on this analogy that the state doctor might be allowed some such privilege. But, as Mr. Young shows, its working would be so difficult as to make any such arrangement most undesirable. The state doctor must be content with his state lot—or lottery. He cannot run with the state fox and hunt with the free practitioners.

For one cannot agree with Mr. Young's conclusion that all must be of the state. To begin with, there are still a very large number of practitioners who joined the profession under the impression that it was a free one. To force them into a whole-time salaried service seems highly unjust, even for the compelling ideas of the state. Further, the presence of a free profession alongside the state doctors is eminently desirable as a competitive stimulus to both parties. Where private practice and state doctoring run side by side, as in many Crown Colonies, it is the private practice that gets all the best of the work, even though there are many able doctors in the Colonial Service. Nor can there be any objection to a free profession on any ground except the prejudice in the minds of the Whole-time State Slave wallahs.

Perhaps the real objection to Freely Practising Doctors is that it would give the whole miserable show away. For the presumptuous assumption of the Beveridge report that doctors must be available for everyone is only an underhand method of taxing everyone to pay for those who like a few penn'orth of state dope—about six penn'orth a time at the present rate of panel pay—very cheap. The existence of free doctors would imply that all would not want the state doctor. The chances are that the implication would be right, and that no-one would be seen near a state doctor if he could afford a free doctor.

Perhaps the most pertinent argument for the free doctor is that, unless he exists, anyone with a little money will be driven to the Continent or to America if he wants a little first-class private practical medicine. And no doubt he will be catered for. The patient might argue that if he is willing to pay for a little personal attention, he is going to see that he gets it.

In contemplating the whole rather unnecessary business of state medicine one is impressed by the failure of the panel system. If the state had originally undertaken to pay the doctor at "piece-work" rates for what is fundamentally piece-work, instead of endeavouring to extract the last ounce of work out of the doctor for a sweated salary called "capitation fee," it would have had a more rational basis to work on and might have bred something other than distrust in the minds of those who originally entered a free profession.

Chiswick, W.4. THOMAS NELSON.

THE GOVERNMENT AND THE PROFESSION

SIR,—The Annual Representative Meeting of the British Medical Association has agreed upon certain principles by which any Government proposals for reconstruction of the health services are to be judged. These principles would restrict progress to a postwar "two-way extension" of National Health Insurance. This is considered by the ARM to be a step towards the implementation of Assumption B of the Beveridge Report.

The public, however, is becoming increasingly aware of the deficiencies of the medical services, which do not allow of a full application of modern medical science to the prevention and cure of ill health. Further, many doctors are coming to realise that their working conditions hinder professional efficiency.

The proposals of the Beveridge report have offered to our profession great opportunities to contribute to social progress, which it has not yet seized. The proposals of the annual representative meeting, indeed, are likely to impede rather than be a step towards the comprehensive health service promised by the Government. The decisions of the ARM have not been well received by the public, and the continuation of an unhelpful attitude on our part must inevitably injure the status of the profession.

In the absence of the white-paper the ARM discussions this year had an unreal quality. There is ample evidence that if and when positive and progressive proposals are actually put before the profession by the Government, there are sufficient medical men to ensure that these proposals receive careful and sympathetic consideration and to coöperate in working a progressive scheme.

The signatories therefore urge the Government to produce without delay the promised white-paper, which they are confident cannot but provide a true implementation of Assumption B in all its aspects. They hope that those who hold similar views will be encouraged by this letter to join them in expressing their support of this view.

238 MEMBERS OF THE BMA.

The names appended to this letter are :—

Grace J. Adam; Robert Adam; Alice Akred; M. S. Aldridge, M. B. Alexander; T. H. Almond; D. Arning; O. F. H. Atkey.

E. T. Bailey; J. Shackleton Bailey; J. B. Bairds; F. Balkwill; G. Barasi; M. L. Barst; John Bee; A. C. Belfield; R. H. Bembridge; T. H. C. Benians; Ruth Bensusan-Butt; J. Bentinck; C. A. Birch; George Black; D. G. de Bouk; Brian Boyd-Cooper; D. S. Brian-Brown; G. Brown; E. Vipont Brown; Harold Buckley; Clifford F. Bullend; O. Bulloch; A. C. S. Burch; H. H. Bradley.

A. N. Cameron; Esther Carling; H. E. Carmalt; W. Chadwick; A. J. Clarke; T. M. Cole; S. Cochrane; W. A. L. Collier; V. L. Collins; W. F. Cooper; B. Couts; J. H. Crawford; Georgette Crosby; C. K. Cullen; W. E. Chiesman.

John Davenport; Ann Davies; James P. Davies; J. O. F. Davies; A. W. Davison; L. F. Delany; W. Pointon Dick; D. Lawson Dodd; E. G. Dolton; T. E. Dorran; Frances Drew; Margaret Duncan; James Dunlop; M. H. Dyson.

N. B. Eastwood; I. Eban; A. M. Edwards; Gilbert Elliott; I. J. Eppell.

J. L. Farquharson; J. Faulkner; Nancie Faux; J. Fettes; J. Fielding; J. Fieldman; L. Fieldman; Samuel Fine; Mary Fisher; P. Fourman; W. W. Fox; T. L. Frank; L. M. Franklin; C. Fraser; Y. Friedl; I. Frost; L. S. Fry.

H. Gainsborough; Patricia Gairdner; G. H. Gange; B. Gans; J. A. Gillison; H. M. Glover; W. N. Goldsmith; M. Gordon; T. Garland; Martin A. Goodwin; S. Gottlieb; G. M. Gray; L. M. Green; F. D. Griffiths.

A. Hancock; B. M. Hearty; C. P. Hearty; Dora M. Hill; W. Hinds; B. Hirsh; S. Hodgson; R. G. S. Howe; S. R. Hulton; J. H. Humphrey.

P. Inwald.

M. Jacob; A. L. Jacobs; A. S. Jarman; T. Francis Jarman; M. B. Jay; E. Clifford Jones; J. C. Jones; H. Joules.

P. Kaplin; S. Kaye; I. J. Keidan; E. F. Kelly; E. Kerner; P. Kidd; E. W. Kirk; T. H. Kirk; Brian Kirman; B. Klempamn.

Norman Lawrie; V. W. Lees; S. Leff; J. G. L'Etang; Harold Lewis; J. Liddell; S. J. Lipetz; F. J. G. Lishman; R. C. Lowe; F. M. Lucas; G. R. W. M. Luntz; R. A. Lyster.

Alison MacBeth; C. MacDonald; B. C. Macirone; A. E. McCandless; Donald Macleod; A. R. McGregor; James McNabb; H. H. MacWilliam; Joan Malleson; R. A. Manclark; M. Marcus; L. M. Masterman; G. H. Miles; E. H. M. Milligan; E. Minalt; D. A. Mitcheson; L. J. Moir; E. Montuschi; H. Munro; D. Munro-Ashman; J. J. Murnane; A. L. M. Morrison.

W. D. Newcomb; Peter Nash; M. Newfield; Edmund I. Newman; N. Newman; R. Nuki.

S. O'Boyle; Greta Olsson; G. M. Osborne; R. L. Osmaston; James O'Connor.

Joseph Parness; J. F. Payan; Mary E. Pearce; B. Perchman; A. Phillips; L. Phillips; M. R. Pollock; H. W. Pooler; R. Poots; Janet Posner; J. Powell-Evans; J. D. Proctor; D. M. Pryce; Anthony W. Purdie; R. F. Price.

R. H. Rankin; Alexander Reid; M. P. Rhodes; J. Robinson; H. D. Rosenberg; J. Ross; Kathleen Rutherford; V. C. Robinson.

R. Schultz; F. E. T. Scott; J. A. Scott; C. I. Schiff; R. P. W. Shackleton; W. J. Sheehan; A. I. Silverman; B. Singh; F. E. Smith; S. Smith; D. H. Smyth; E. Snell; Arnold Sorsby; Max Sorsby; M. Stein; Wm. Stott; J. Mitchell Stuart; Barnet Stross; H. W. Swann; F. A. H. Simmonds.

E. N. Taffs; F. Taylor; Evelyn Terry; M. D. Thakore; Felix F. Tietze; O. F. Thomas; R. H. Toothill; D. M. Trice; P. Tyrer; S. M. R. Thomson.

C. K. Vartan; M. Le Vay; Noel Vinter; H. E. Vickers.

M. Wayne; David Waxman; E. Westerlow; Joyce M. Wigram; E. A. Worley; R. R. Wilson; John Winning; A. H. Wortman.

P. Yarrow; S. L. Yates.

RETREAT TO 1938

SIR,—We wish to record our profound disappointment with the decisions taken at the Annual Representative Meeting of the British Medical Association. We had hoped that the ARM would reaffirm its support for a national medical service to cover 100% of the population and that it would develop its 1942 proposals for health centres. Instead of that, we have to witness a retreat from the progressive decisions of 1942 to the timid and out-of-date proposals of 1938. The BMA has taken one step forward and two steps back.

The recommendation for a two-way extension of the panel system would seem to preserve the evils both of crowded panel practice and competitive private practice, while the recommendation that the development of health centre practice should wait until experimental centres have been tried out may result in indefinite postponement.

We would urge the council of the BMA to reconsider their timid programme not in terms of prewar 1938, but in the light of present aspirations and postwar opportunities. The medical profession resisted the introduction of National Health Insurance in 1911. Today it appears that our biggest organisation, the BMA, may resist the introduction of a comprehensive medical service as required for the Beveridge plan of social security. Are we as a profession, to be blamed for trying to put the clock back twice in a generation?

T. H. ALMOND.
M. ATKIN.
C. H. BÖSENBERG.
UNA M. CAMPBELL.
BALBINA DROLLER.
M. MIDDLETON.
JOHN PEMBERTON.
A. SMITH.
H. J. WHITELEY.
ANDREW WILSON.
F. R. ZADIK.

Sheffield.

MEMORIAL TO PROF. WARRINGTON YORKE.—The council of the Liverpool School of Tropical Medicine is to use Sir Robert Rankin's gift of £500 to commemorate the scientific work of the late Prof. Warrington Yorke. They will award a memorial medal twice yearly on the result of the examinations held for the diploma in tropical hygiene.

Captain Edward Raymond Stone, MD, Washington, RAMC, was posted as killed last March (*Lancet*, 1943, i, 448). But we are glad to learn that his English namesake, Captain Ernest Richard Stone, MB CAMB, RAMC, of Coulsdon, Surrey, is alive and well.

Obituary

CECIL ROWNTREE

M B LOND, F R C S

UNTIL illness stopped his work two years ago, Cecil Rowntree had a large surgical practice in and around London. He was widely esteemed and widely liked, and he used his talents unsparingly in the campaign against cancer.

His father, W. G. Rowntree, was a London practitioner, and he was educated at University College and the Middlesex Hospital. He was well equipped in body, intellect and imagination, and by hard work he gained his surgical fellowship early and became surgical registrar at his own hospital. A gay courageous fighter to the end of his life, he began his fighting career (writes a friend) when on a matter of principle he took a decision which closed the door to quick security and higher appointment. "From then onwards principle and loyalty always came before expediency and personal advantage: he never compromised. He fought for reforms and innovations in all branches of our profession, and was ever ready for change. A rut to him was a grave without the ends. Later in life he expressed himself well pleased with his early choice, because of the friendships, the opportunities and the work it had brought."

Apart from a period of service in the RAMC during the war of 1914–18, this work chiefly revolved round the Royal Cancer Hospital, of which he became senior surgeon, the Dreadnought and Woolwich Memorial Hospitals and the cottage hospitals at Caterham and East Grinstead. Rowntree was a good technician and a dexterous surgeon. He began practice at a time when it was customary to operate on private patients in their homes or in poorly equipped nursing-homes, and he became inured to difficulties; indeed, he liked to work on his own and until later years often operated with only the theatre sister to assist him. The patient always came first in his mind, and he was a pioneer in the use of premedication. Considerate and charming, he made his assistants and his patients into friends. "To him the man was greater than his accomplishment and the sick more important than the sickness." He always listened attentively to the views of younger men and tried to help them. Though he was best known as expert on cancer —especially perhaps cancer of the breast—and he did much to develop the present technique of radium therapy, it was in the wider scope of general surgery that his ideas found full play, and those whom he taught have much to remember him by.

From the launching of the British Empire Cancer Campaign Rowntree was associated with it as representative of the Cancer Hospital. Until two years ago he was deputy chairman of the executive, and as a committee-man he was invaluable. Whatever he said commanded attention because of his thorough knowledge and lucidity, and his tactful way of dealing with difficulties made him an asset in council or on deputation. He did much to steer the Campaign through its years of infancy and bring it to its present assured position. He was also vice-president, and a member of the executive, of the Union Internationale contre le Cancer.

An athlete in his youth, he was a tall, handsome man, of commanding presence both in the theatre and outside it. His yellow Rolls-Royce car—he had the same chauffeur from the beginning—was long a familiar sight, and on social occasions he showed himself one of the best after-dinner speakers in the profession; he could always be relied on for a good and witty speech that was neither too long nor too short. With his wife he made a home which friends were eager to enter and left inspired. Despite all preoccupations, he insisted on finding time to build up a friendship with his children and to plan and guide their lives and education. He leaves two sons and a daughter. His death on Oct. 14 ended four years of wearisome ill health, from which he knew there could be no recovery; but his friends felt that the victory lay with him.

ANDREW JAMES CAIRD

B SC, M B EDIN, F R C S E

Mr. Caird of Carlisle died at Edinburgh on Oct. 11 at the age of 52. He was an able, active and versatile man, whose death will be widely regretted.

Son of the Rev. David Caird, he was born at Perth and educated at the Perth Academy where he was dux. He graduated in arts and science at Edinburgh before taking his MB in 1916, and he gained many students' prizes. Joining the RAMC, he was soon sent to Salonika, and he worked for a year on the rehabilitation of orthopædic and other surgical cases at a convalescent camp. On being invalided home in July, 1918, he continued this interest at Shepherd's Bush under Sir Robert Jones, and also served at the Edinburgh war hospital under Sir Harold Stiles. On demobilisation he became tutor in clinical surgery at the Royal Infirmary and demonstrator in anatomy. His association with Carlisle began in 1920 with a post under the Ministry of Pensions, and three years afterwards he was elected to the staff of the Cumberland Infirmary. Later appointments included those of surgeon to the Carlisle Dispensary, consulting surgeon to Cockermouth Cottage Hospital and the City General Hospital, and orthopædic surgeon to the Carlisle Cripple Clinic.

Outside surgery Caird gave much time and thought to schemes for the welfare of young people, especially in connexion with the Boy's Brigade and the Air Training Corps. Like his father he was a Congregationalist, and he became president of the Congregational Union of the North of England. He wrote verse; his etchings and water-colours were exhibited at the Royal Scottish Academy and elsewhere; and he enjoyed gardening and fishing. He lately lost his eldest son, who was serving in the Royal Air Force, and Mrs. Caird is left with two younger sons.

STEPHEN THOMAS FALLA

M D LOND, M R C P

NEWS of the death of Stephen Falla on Sept. 16 comes from the Middle East where he was serving as a medical specialist. He was 33 years of age, and son of the late Alfred Falla of Guernsey. He qualified in 1933 from the London Hospital, where he was emergency officer before going to the Brompton Hospital as house-physician. He was also house-physician at the Royal Free and resident medical officer at the Royal Masonic Hospital. In 1937 he was elected physician to the Norfolk and Norwich Hospital and assistant physician to the Jenny Lind Hospital for Children. His experience at the Brompton had given him a special interest in chests, but his outlook was broad and in particular he became an adept with the gastroscope. He showed both promise and charm. "He was keen and conscientious" writes a colleague, "in all that he undertook to do," and "his enjoyment of life endeared him to many." He loved music and sailing, and he was an ardent and strong swimmer.

Falla was hon. secretary of the Norfolk and Norwich Medico-Chirurgical Society, and when war broke out he organised a blood-transfusion service for the county and city. Two years ago he joined the RAMC, in which he held the rank of major. He was working in a base hospital MEF, and lost his life while bathing.

EDWARD HENRY ALLON PASK

M D LOND

Dr. Allon Pask, medical superintendent of the Wrightington Hospital and a consultant tuberculosis officer of the Lancashire county council, died on Oct. 4 at his home on the hospital estate. He was born at Worksop in 1884, graduated in medicine at Sheffield, and later took London degrees. After 15 months of house appointments at the Sheffield Royal Infirmary and a period of private practice he entered the Colonial Service and was posted to Nyasaland, where medicine was tempered with big-game shooting. He then returned to the Sheffield

Royal Infirmary and became senior house-physician and resident surgical officer. After a term at North St. Pancras Infirmary as assistant medical superintendent, he finally entered the tuberculosis service, beginning as assistant to the late G. B. Dixon at the Birmingham Tuberculosis Dispensary and Yardley Road Sanatorium. This was during the period of "mass" inoculation of tuberculin, about the time when the National Insurance Act came into force. Later he became medical superintendent of the Salterley Grange Sanatorium, near Cheltenham, where his chairman was Neville Chamberlain. In 1913 he entered the service of the Lancashire County Council and was engaged in dispensary work till the outbreak of the late war, when he joined the Forces, returning in 1916 to become the first medical superintendent of High Carley Sanatorium, near Ulverston. In 1931 he was promoted to the newly built Wrightington Hospital for non-pulmonary tuberculosis (226 beds), and his responsibilities there were much increased by the construction of an EMS Hospital (252 beds) during the present war. He was also responsible for the dispensary work in the surrounding Wigan county area, with a population of 105,000.

In 1930 Pask went to Canada and the United States with the party of British tuberculosis officers. He also undertook, at the request of the Ministry of Health, an investigation in Germany into the merits of Gerson's salt-free diet. He was both a good administrator and a good clinician: urbane, thorough and competent, he earned the confidence, respect and affection of his colleagues. He leaves a widow.

VICTOR VARTAN MUIR

M B EDIN

Dr. Victor Muir was lost at sea during July when the ship in which he was returning to Nigeria was sunk by enemy action. He was the son of Dr. Ernest Muir, medical secretary of the British Empire Leprosy Relief Association who is at present in charge of the Leprosarium in Trinidad. Victor Muir was educated at George Watson's College, Edinburgh, and graduated in medicine from the University of Edinburgh in 1939. The following year he took the diploma of tropical medicine and hygiene and entered the Colonial Medical Service. After holding a house-appointment at the Edinburgh Royal Infirmary he was posted to Nigeria in October, 1940. He returned to this country in March of this year and during his leave passed the clinical examination for his MD. He leaves a widow.

Infectious Disease in England and Wales

WEEK ENDED OCT. 16

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 3324; whooping-cough, 1482; diphtheria, 707; paratyphoid, 3; typhoid, 5; measles (excluding rubella), 675; pneumonia (primary or influenzal), 569; puerperal pyrexia, 153; cerebrospinal fever, 37; poliomyelitis, 19; polio-encephalitis, 0; encephalitis lethargica, 5; dysentery, 253; ophthalmia neonatorum, 87. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on Oct. 13 was 2029. During the previous week the following cases were admitted: scarlet fever, 254; diphtheria, 50; measles, 15; whooping-cough, 43.

Deaths.—In 126 great towns there were no deaths from enteric fever, 2 (0) from measles, 2 (0) from scarlet fever, 6 (0) from whooping-cough, 7 (0) from diphtheria, 58 (10) from diarrhœa and enteritis under two years, and 18 (5) from influenza. The figures in parentheses are those for London itself.

Liverpool and Birmingham each reported 8 deaths from diarrhœa. There were 3 fatal cases of diphtheria at Wolverhampton.

The number of stillbirths notified during the week was 232 (corresponding to a rate of 35 per thousand total births), including 19 in London.

Notes and News

NEWS FROM CHINA

IT is with pleasure that we welcome the reappearance of the *Chinese Medical Journal*, whose publication was suspended in December, 1941, owing to the occupation of the Chinese Medical Association's offices by the Japanese. War-time conditions made it impossible to obtain the necessary printing facilities for such a journal in free China, but through the generosity of the China Foundation of the USA an office has been opened in Washington (the address of which is PO Box 6096), and the first number issued from there. It is proposed to continue publication from America quarterly until the end of the war, a medical digest being at the same time issued in the Chinese language from Chungking, in place of the former *National Medical Journal*.

The new journal is edited by Dr. J. Heng Liu and Dr. Szeming Sze (the latter will be remembered by many former friends and associates at Cambridge and St. Thomas's), and contains many valuable articles and reports related to health conditions and medical services in China under the stress of wear. They include accounts of typhus fever in Kunming and Shanghai, subtertian malaria in Yunnan, the present status of malaria in free China, and epidemic prevention and control. This last article, which has particular reference to outbreaks of plague and cholera, contains a description of the activities of the Weishengshu Anti-epidemic Corps, which, working from headquarters in Chungking, provides mobile units for despatch to any area in which an outbreak occurs. In one year this corps participated in the control of plague in Fukien, Chekiang, Kiangsi and Hunan; of cholera in seven other provinces; of typhus and relapsing fever in Hupeh and Honan; and of various epidemics of meningitis, malaria and smallpox. During this period they administered nearly 600,000 preventive inoculations and carried out widespread measures of investigation and disinfestation.

In connexion with one epidemic of bubonic plague—at Changteh, in November, 1941—a fact is recorded which raises the possibility of enemy action as an instrument in spreading bacterial war. It is stated that a few days before the outbreak, Japanese planes appeared over the city, dropping packets of grain and rags, and it was in the very districts in which these strange parcels were delivered in this unusual fashion that the epidemic first made its appearance. Dr. R. Pollitzer, epidemiologist of the National Health Administration, who investigated the incident, believed that plague-infected fleas had been embedded in the grain and rags, and that they thus spread to the rats of the neighbourhood.

The journal contains news of various agencies and relief organisations working in, or on behalf, of China during the war, and it is noteworthy that the Henry Lester Institute of Medical Research is still functioning, though under a Japanese director. We regret to hear that the Peking Union Medical College and Hospital, with their magnificent buildings and equipment, have all been seized by the Japanese, the college closed, and the former director, Dr. H. S. Houghton, interned.

IN the Students' Guide (*Lancet*, Aug. 28, p. 269) the Prince of Wales's General Hospital was erroneously placed among the hospitals of group B. These are hospitals which as a result of bomb damage or for other war reasons can offer only outpatient teaching. Actually the North-East London Postgraduate College of the Prince of Wales's Hospital is once more offering teaching almost of prewar scope. In-patients, outpatients and special departments are all open to postgraduates, and clinical demonstrations, ward rounds and lectures have been arranged both there and at allied hospitals. The special departments give experience in allergy, eye and ear diseases, skins, fractures, genito-urinary and gynæcological conditions, neurology, pædiatrics, psychiatry, physiotherapy and dental work. The Middlesex County Council centre for the treatment of venereal diseases is also held at the hospital. Instruction is given in administration of anæsthetics and courses in infectious fevers and psychological medicine can be arranged at associated hospitals. The North Middlesex, with 1000 beds, is among the hospitals collaborating in teaching. The college is recognised by the University of London as a place for postgraduate study for the MD and MS degrees and for diplomas in child health and anæsthetics. Doctors practising in the neighbourhood are invited to become members and special arrangements are made for their attendance at lectures and clinics—a method of making the teaching hospital the centre of local medical life and interest which might be copied elsewhere.

University of Oxford

In a congregation held on Oct. 14, the following degrees were conferred:

BM, BCh.—Thomas Stapleton (in person); G. F. Bader, T. E. S. Stowell, A. J. Watkin, C. E. Davies, Helen M. C. Morley (in absence).

Theodore Williams Scholarship.—An examination for this scholarship will be held in the Sir William Dunn School of Pathology on Wednesday, Nov. 17, at 2 PM. The scholarship is open to any member of the university, who on June 30, 1943, had not exceeded twenty-six years of age and had attended a course in general pathology and bacteriology in the school either in 1942–43 or 1941–42. Candidates should inform the Professor of Pathology before Nov. 13.

University of Cambridge

On Oct. 15 the following degrees were conferred:

M.D.—M. J. Clow and A. L. Fawdry (by proxy); H. L. Hoffman and B. L. F. Heydon.

MB, B Chir.—M. C. Cross, Peter Unwin, M. M. Walker, P. A. O. Wilson, A. J. Gray, E. N. M. Johnston, D. C. Sturdy, J. L. S. Smith, P. R. Swyer, C. O. Edwards and A. I. MacLeod (by proxy); and W. V. Bowman.

MB.—J. L. Potts and G. H. Ward (by proxy).

Royal College of Surgeons of Edinburgh

At a meeting of the college held on Oct. 20, the following office-bearers were elected for the ensuing year:

President, Prof. R. W. Johnstone; vice-president, Mr. J. W. Struthers; secretary and treasurer, Mr. K. Paterson Brown; members of President's Council, Mr. James Graham, Sir John Fraser, Mr. A. Pirie Watson, Dr. G. Ewart Martin, Mr. Francis Jardine, and Mr. W. Quarry Wood; representative on the General Medical Council, Mr. Henry Wade; convenor of museum committee, Mr. W. Quarry Wood; and librarian, Dr. Douglas Guthrie.

The following were elected to the fellowship:

William Cowell, MB DURH; Evan Griffiths, MB LOND; W. G. Holdsworth, MB MELB; A. M. Howard, MRCS; S. L. Mann, MB GLASG; A. G. C. Neill, MB EDIN; St. J. G. O'Connell, MB NUI; C. C. Slack, MB LPOOL; and H. B. Young, MB GLASG.

Medical Casualties

The following casualties have been announced recently:

Killed.—Captain H. G. Greeves, MB BELF., RAMC.

Missing, presumed killed.—Surgeon Lieutenant P. H. Colver, MB BIRM., RNVR.

Wounded.—Captain J. H. F. Brotherston, MB EDIN., RAMC.

Prisoners of War in Japanese hands.—Flight-Lieutenant R. A. Cumming, MB ABERD., RAFVR, Flight-Lieutenant A. N. H. Peach, MB BRIST., RAFVR; and Flight-Lieutenant W. N. Riley, MRCS, RAFVR.

Four Years' Plan for Children's Nurseries

The Minister of Health has received a deputation from the National Society of Children's Nurseries on its four years' plan for nursery development after the war. The deputation was headed by the chairman, Major C. H. Nathan, and included Lady Gunston, Mrs. W. H. Norton, Sir Bruce Bruce-Porter, Dr. Björkegren, Dr. Ursula Shelley, Miss Evelyn Pantin, Miss Alma Fox and Mrs. F. V. Enthoven. Mr. Brown promised to give full consideration to the society's representations for postwar nurseries on an extended scale.

Royal Society of Medicine

On Tuesday, Nov. 2, at 2 PM, Mr. S. A. S. Malkin will deliver his presidential address to the section of orthopædics on the contribution of orthopædic surgery to hospital development. Afterwards Major R. Soto-Hall, USAMC, will speak on the training of an orthopædic surgeon in the USA, and Prof. Harry Platt on orthopædic surgery and the future. The section of pathology will meet on the same day at 4 PM, and there will be a general meeting of fellows of the society at 4.30 PM. At the section of history of medicine on Nov. 3, at 2.30 PM, Dr. E. Ashworth Underwood will read a paper on Antoine Lavoisier and his predecessors in the field of respiration and metabolism. On the same day, at 5 PM, Sir James Walton will give his presidential address to the section of surgery. He is to speak on injuries to the common bile-duct and Surgeon Rear-Admiral G. Gordon-Taylor, Prof. G. Grey Turner and Dr. E. R. Flint will open the discussion which is to follow. On Nov. 5, at 10.30 AM, Mr. T. B. Jobson is to give his presidential address on the audibility of the radio voice and the discussion will be opened by Mr. John Snagge and Mr. W. M. Mollison. At the section of anæsthetics at 2.30 PM on the same day Squadron-Leader B. G. B. Lucas will read a paper on pulmonary complications following simple hernia operations. The section of laryngology is meeting at the same hour when Mr. Mollison is giving his presidential address on pain in laryngology. Afterwards Dr. Wilfred Harris, Captain A. G. M. Weddell and Mr. C. P. Wilson are to open the discussion.

British Social Hygiene Council

On Monday, Nov. 1, at 3.30 PM, Sir Walter Langdon-Brown, the president of the council, is to give an address on social biology and planning. The meeting will be held at BMA House, Tavistock Square, London, W.C. 1.

Bristol Merger

The committee of management of the Bristol Aeroplane Company Employees Hospital Fund and the council of the Bristol Hospitals Fund (Inc.) have agreed (subject to ratification in accordance with their existing constitutions) to combine and merge their funds and interests and to set up a new amalgamated fund. The governing body of the new fund will consist of the following representatives: 25 employee contributors, 5 employer contributors, 2 from the Bristol and District Divisional Hospitals Council, 7 from voluntary hospitals, 2 from medical staffs, the chairman of the Bristol health committee, the Bristol MOH, 2 from the University of Bristol, 2 from the Bristol Trades and Labour Council, and 1 from the Bristol panel and local medical committee.

Medical Honours

The following awards have been made to medical officers:

OBE (military division).—Lieut.-Colonel H. W. Farrell, FRCSE, IMS.

DSC.—Surgeon Lieutenant M. J. Hood, MB GLASG., RNVR.

Hood was serving in a destroyer. While she was on convoy escort duty last winter a signal was received from another escort ship asking for medical attention for injured men. Icing conditions made it impossible to get seaboats away and the only alternative was for one ship to go alongside the other. This was achieved, but owing to the wind and swell it was dangerous for both ships to remain together for more than a matter of seconds. As the vessels, both of which were covered in ice, closed, Hood jumped from one ship to the other. One slip might have cost him his own life. Then for 30 hours he worked unceasingly among the wounded. His operating-table was the table of the seamen's mess-deck, and to help him to keep a steady hand as the ship pitched and rolled, two ratings supported the doctor as he worked.

Appointments

CONNELL, J. S. M., FRCSE: surgeon to the gynæcological department of the Walsall General Hospital.

BRAMWELL, B. R., MD MANC., MRCP: medical referee for the county-court districts of Downham Market, East Dereham, Fakenham, Holt, King's Lynn, North Walsham, Norwich, Swaffham, Thetford and Wymondham (circuit No. 32).

JONES, A. M., MRCS: medical referee for the county-court districts of Bangor, Conway, Llandudno and Colwyn Bay; and Llanrwst.

TERRY, ELSIE M., MD LOND.: asst. surgeon to the gynæcological department of the Walsall General Hospital.

WALKER, M. M., MRCS: asst. M.O in Kingston Public Hospital, Jamaica.

Births, Marriages and Deaths

BIRTHS

BOWEN.—On Oct. 17, at Barry, Glam., the wife of Mr. J. Glyn Bowen, FRCS—a daughter.

ILES.—On Oct. 15, at Cairo, the wife of Major J. D. H. Iles, RAMC, of Starcross, Devon—a son.

JACKSON.—On Oct. 14, at Oxford, the wife of Lieutenant C. R. S. Jackson, RAMC—twin sons.

LANGMEAD.—On Oct. 22, the wife of Dr. L. B. Langmead, of Tunbridge Wells—a son.

MALING.—On Oct. 22, at Kew, the wife of Lieutenant P. B. Maling, GM., RAMC—a son.

MARRIAGES

DAWSON—HOGG.—On Oct. 23, in London, William Watson Dawson, MB, of Wantage, Berks, to Josephine Stuart Hogg.

PAYNE—LOVELACE.—On Oct. 16, at Chichester, Cyril Ernest Reginald Payne, surgeon lieutenant, RNVR, to Mary Lovelace, of Claygate, Surrey.

TATTERSALL—TOWNEND.—On Oct. 16, at Chiswick, William Horrocks Tattersall, MB, of Blackburn, to Joan Novello Townend.

WATERS—BLYTON.—On Oct. 20, Kenneth Fraser Darrell Waters, FRCSE, to Enid Blyton.

WILLINGTON—MATHEWS.—On Oct. 11, in Dublin, Frederick Lane Willington, major RAMC, to Joan Mathews.

WILLMOTT—MANSFIELD.—On Oct. 20, at Cambridge, Leslie Arthur Willmott, captain RAMC, retd, to Helen Mary Mansfield.

DEATHS

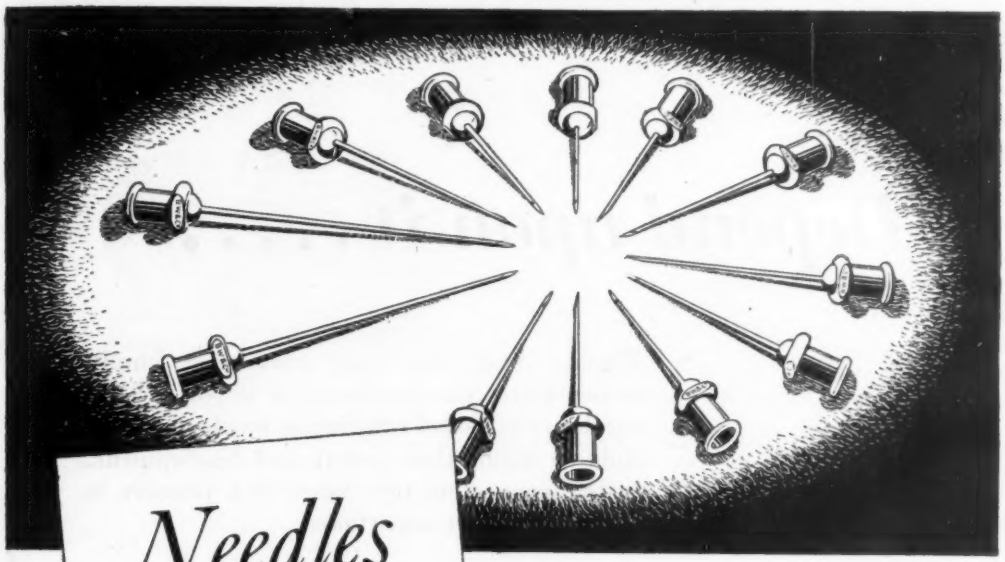
BATTEN.—On Oct. 22, at Hampstead, Rayner Derry Batten, MD LOND., aged 85.

JONES.—On Oct. 21, at Bath, Philip Theodosius Jones, MRCS.

MANN.—On Oct. 22, Fairman Rackham Mann, MRCS, surgeon commander, RN retd, of Tasburgh, Norwich.

PRITCHARD.—On Oct. 20, at Exmouth, Eric Pritchard, MD OXFD, FRCP.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.



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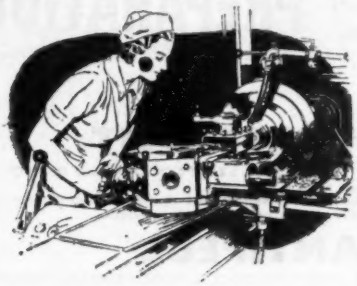

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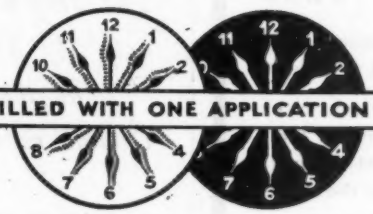

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The lectures are open to the profession and medical students.

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DIARY FOR WEEK ENDING 5TH NOVEMBER, 1943.—*Daily*, 10 A.M. to 4 P.M., Medical Clinics, Surgical Clinics and Operations, Obstetrics and Gynæcological Clinics and Operations. 1.30 P.M., Post-mortems. *Monday*, 10 A.M., Course on "The Surgical Care of the Soldier in Training" commences. *Tuesday*, 10 A.M., Pædiatric Clinic, Dr. R. Lightwood; 11 A.M., Gynæcological Clinic, Mr. Green Armytage. 2 P.M., "Innocent and Malignant Growth in vitro," Dr. R. J. Ludford. *Wednesday*, 11.30 A.M., Clinico-Pathological Conference (Medical). *Thursday*, 2 P.M., Dermatological Clinic, Dr. R. T. Brain; 2.15 P.M., X-ray Demonstration on "Intrathoracic Neoplasms." *Friday*, 12.15 P.M., Clinico-Pathological Conference (Surgical); 2 P.M., Clinico-Pathological Conference (Gynæcological); 2 P.M., Neurological Ward Clinic, Mr. G. C. Knight; 2 P.M., Sterility Clinic, Mr. Green Armytage.

Royal College of Physicians of London.

Dr. J. W. BROWN, F.R.C.P., will deliver the BRADSHAW LECTURE on THURSDAY, 4TH NOVEMBER, at 2.15 P.M., at the College, Pall Mall East, S.W.1.

Subject: "The Interauricular Septal Defect."

Any Member of the Medical Profession admitted on presentation of card. By Order of the President,

H. M. BARLOW, Secretary.

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This is a Reception Hospital in detached grounds with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the complete investigation and treatment of Mental and Nervous Disorders by the most modern methods; insulin treatment is available for suitable cases. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombieres treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-Ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High-frequency treatment. It also contains Laboratories for bio-chemical, bacteriological, and pathological research. Psychotherapeutic treatment is employed when indicated.

MOULTON PARK

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupational therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (TELEPHONE: No. 2356 and 2357 Northampton), who can be seen in London by appointment.

CALDECOTE HALL

NUNEATON
WARWICKSHIRE
('Phone: Nuneaton 241)

Residential treatment of

"Nervous Disorders" & Alcoholism

(Certifiable cases are not received)

This beautiful mansion situated in the heart of the country (less than two hours from London by L.M.S.R.) and surrounded by charming pleasure grounds in which games and outdoor occupational therapy are available is devoted to the treatment of Alcoholism and "Nerves" by psychotherapeutic and ancillary methods.

Illustrated Brochure and particulars obtainable from A. E. CARVER, M.D., D.P.M., Resident Medical Superintendent.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5

Telegrams: "PSYCHOSIS, LONDON" — FOR THE TREATMENT OF MENTAL DISORDERS — *Telephone:* RODNEY 4343 (5 lines)

Completely detached Villas for mild cases. Voluntary Patients received. Twenty acres of grounds; own garden produce. Hard and grass tennis courts, putting greens, Recreation Hall with Badminton Court, and all indoor amusements. Occupational therapy, Calisthenics, Actino-therapy, prolonged immersion baths, shock and also modified insulin treatment. Chapel.

Senior Physician, Dr. HUBERT JAMES NORMAN, assisted by a resident Medical Staff and visiting Consultants

An Illustrated Prospectus giving fees, which are strictly moderate, may be obtained upon application to the Secretary

The Convalescent Branch is HOVE VILLA, BRIGHTON and is 200 ft. above sea-level

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15

Telegrams: "Alleviated, London" — Telephone: Rodney 2641-2642

A Private Mental Hospital, for Ladies and Gentlemen suffering from Nervous and Mental Illness, where the amenities of a comfortable home are combined with full investigation and every well-established modern treatment.

Terms from 3½ guineas weekly.

Illustrated Prospectus may be obtained from the Physician Superintendent.

COURT HALL, KENTON, near EXETER

FOR THE TREATMENT OF EIGHT LADIES, VOLUNTARY, TEMPORARY AND CERTIFIED PATIENTS

CLIFFDEN, TEIGNMOUTH

FOR EARLY AND CONVALESCENT CASES — Recreational Therapies are held daily by skilled Leaders

The house stands high with spacious balconies and extensive views of the South Devon Coast. Beautiful garden. Own Dairy in 25 acres. Private road to beach. There is also a charming house, EBWORTHY, MANATON, DARTMOOR, situated in 20 acres, 1100 ft. up for bracing moorland air

Resident Physicians—BERTHA M. MULES, M.D., B.S. ANNE S. MULES, M.R.C.S., L.R.C.P. — *Telephones*—STARCROSS 259 and TEIGNMOUTH 289

TOR-NA-DEE SANATORIUM

Managing Director: DAVID LAWSON, M.D., F.R.S.E.

FOR THE TREATMENT OF PULMONARY TUBERCULOSIS AND ALLIED DISEASES

Medical Superintendent: R. Y. KEERS, M.D. (Edin.)

For prospectus apply to The Secretary, Tor-na-Dee, Murtle, Aberdeenshire — Telephone: Cults 107

CHEADLE ROYAL

CHEADLE
CHESHIRE

A Registered Hospital for MENTAL DISEASES, and its Seaside Branch, GLAN-Y-DON, Colwyn Bay, N. Wales

THE object of this Hospital is to provide the most efficient means for the treatment and care of PATIENTS of BOTH SEXES suffering from MENTAL and NERVOUS DISEASES. The Hospital is governed by a Committee appointed by the Trustees of the Manchester Royal Infirmary. VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS RECEIVED

For Terms and further information apply to the MEDICAL SUPERINTENDENT — Telephone: GATLEY 2231

SPRINGFIELD HOUSE

'Phone: BEDFORD 3417. **Near BEDFORD**

For Mental Cases with or without Certificates.

Ordinary Terms: Five Guineas per week (including Separate Bedrooms for all suitable cases without extra charge).

For forms of admission, &c., apply to the Resident Physician, CEDRIC W. BOWER.

INTERVIEWS IN LONDON BY APPOINTMENT.

THE MAGHULL HOMES FOR EPILEPTICS (Inc.)
MAGHULL, Near LIVERPOOL

Open Air Occupation and Recreation for Patients, Farming, Gardening, Football, Cricket, Tennis, Bowls, etc. School recognised by Board of Education.

FEES—1st Class (men only) .. .. from £3 per week
2nd Class (men and women) .. .. ,, 37/6 ,,
3rd Class (men and women) supported by—
Public Assistance Committees .. ,, 27/6 ,,
Education Committees .. .. ,, 33/6 ,,
Private .. .. ,, 21/- ,,

For further particulars apply to—
C. EDGAR GRISEWOOD, A.C.A., 30, Exchange Street East, LIVERPOOL, 2.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQUARE, LONDON, W.C.1

Over 50 years' experience

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS

MEDICAL PROSPECTUS (36 pages)

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Metropolitan Borough of St. Marylebone

TEMPORARY TUBERCULOSIS OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from registered medical practitioners for the above temporary whole-time appointment during the absence on military service of the present holder at a salary of £800 per annum, plus bonus (at present £33 16s. per annum). Candidates must possess the qualifications for Tuberculosis Officers prescribed by regulations made by the Minister of Health and be the holder of a Diploma in Public Health. They should also have experience in the work of a Tuberculosis Dispensary with X-ray plant and in the duties of an Assistant Medical Officer of Health. Applications, stating age, qualifications, and experience, together with copies of recent testimonials (not returnable), must be sent to the undersigned not later than 12th November, 1943. The appointment (determinable by one month's notice on either side) will be subject to the approval of the Minister of Health and the London County Council, to the Council's superannuation scheme, staff regulations for the time being in force, and satisfactory medical examination. The Council's Standing Orders provide that canvassing shall disqualify an applicant.

T. J. WILSON, Town Clerk.

Town Hall, St. Marylebone, W.1.

Evelina Hospital for Sick Children,

London, S.E.1.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY AND OUT-PATIENT OFFICER (A), vacant 1st December. Salary £150 p.a. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications, stating age, qualifications with dates, and previous experience, accompanied by copies of recent testimonials, to be sent by first post on Friday, 5th November, to—

8th October, 1943. W. H. SIDNELL, House Governor.

Weir Hospital, Weir Road, Balham,

London, S.W.12.

Applications are invited from registered medical practitioners, Female, for the appointment of RESIDENT HOUSE SURGEON (B2), vacant end of November. Salary at the rate of £200 p.a., with full residential emoluments. W practitioners who now hold A posts may apply, when appointment will be limited to six months.

Applications, stating age, qualifications, nationality, and present position, accompanied by copies of three recent testimonials, should be sent to the HONORARY SECRETARY-SUPERINTENDENT.

The Governors of The Prince of

WALES'S GENERAL HOSPITAL, London, N.15, will shortly proceed to the election of a TEMPORARY HONORARY ASSISTANT PHYSICIAN to the DEPARTMENT OF PHYSICAL MEDICINE. Candidates must be engaged in consulting practice only. Further details can be obtained from the Director.

Applications, together with copies of three recent testimonials, should be lodged with the undersigned on or before Wednesday, 10th November. J. C. BURDETT, Director and House Governor.

5th October, 1943.

King Edward Memorial Hospital,

Ealing, W.13.

Applications are invited from registered medical practitioners for the appointment of CASUALTY OFFICER AND HOUSE SURGEON (Gynæcological, &c.) (A), vacant 1st November. Six months' appointment. Salary at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply.

Applications, stating age, nationality, qualifications with dates, and details of experience, together with copies of two recent testimonials, should be sent immediately to—

R. A. MICKELWRIGHT, House Governor.

Memorial Hospital,

Shooter's Hill, London, S.E.18.
(General Hospital—137 Beds.)

Applications are invited from Male registered medical practitioners for appointment as JUNIOR RESIDENT MEDICAL OFFICER (A). The appointment will be for six months, with effect from 1st December, 1943. Salary £175 p.a., with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply.

Application should be made on the prescribed form, obtainable from the undersigned, and sent in to reach him not later than 15th November, 1943. R. S. G. HUTCHINGS, Secretary.

Borough of Ealing.

TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified medical practitioners for the above position. A candidate must have had at least three years' experience in the practice of the profession. The person appointed will be required to carry out medical inspection of school-children and child welfare work and perform such other duties as may be allotted as Assistant to the Medical Officer of Health and the School Medical Officer.

The person appointed will be required to devote the whole time to the duties and will not be allowed to engage in private practice.

The salary will be at the rate of £600 per annum, rising by £25 per annum to £700, plus bonus amounting to £33 16s. per annum.

Copies of the application form and terms of appointment can be obtained from Dr. Thomas Orr, Medical Officer of Health, Town Hall, Ealing, W.5, to whom application, accompanied by copies of not more than three recent testimonials, must be delivered not later than the 11th November, 1943.

R. H. WANKLYN, Town Clerk.

Town Hall, Ealing, W.5, 29th October, 1943.

St. Mary's Hospital, W.2.

THIRD ASSISTANT PATHOLOGIST (B1).

Applications for the above post are invited from registered medical practitioners. The appointment is for a period of twelve months (the holder to be eligible for re-election for a second period of twelve months), as from a date to be arranged, at a salary of £350 per annum (for the period of the war). Suitably qualified R and W practitioners now holding B2 posts, also R practitioners holding B1 and rejected by the R.A.M.C., may apply.

Applications, stating nationality, date of birth, permanent address, qualifications with dates, and appointments held, together with copies of not more than three testimonials, should reach the undersigned on or before Monday, 15th November.

19th October, 1943. E. W. STOCKWELL, Secretary.

The Hospital for Sick Children,

Great Ormond-street, London, W.C.1.

The Board of Management invite applications for the following temporary appointments to the Visiting Staff:—

One ASSISTANT SURGEON.
One ASSISTANT AURAL SURGEON.

Candidates should hold the Fellowship of the Royal College of Surgeons of England.

The latest date for receiving applications is Wednesday, 17th November, 1943.

Forms of application, with further particulars, are obtainable from: H. F. RUTHERFORD, Secretary.

October, 1943.

Borough of Walthamstow.

THORPE COOMBE MATERNITY HOSPITAL. (54 Beds.)

ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited from qualified medical Women for the above B1 post, tenable for one year at a salary of £200, plus bonus of £18 5s. (subject to satisfactory service), with board, residence, and laundry. Previous experience in obstetrics is desirable. Suitably qualified W practitioners holding B2 posts may apply.

Forms of application to be obtained from the undersigned should be completed and returned, with copies of three recent testimonials, not later than NOON on Saturday, the 13th November, 1943. G. A. BLAKELEY, Town Clerk.

Town Hall, Walthamstow, E.17, 22nd October, 1943.

HIS MAJESTY'S COLONIAL SERVICE

THE COLONIAL MEDICAL SERVICE

VACANCIES FOR MEDICAL OFFICERS

The maintenance of an efficient Colonial Medical Service constitutes a vital part of the national war effort and it is most important that the Service should be assured of an adequate supply of doctors.

The Secretary of State for the Colonies therefore invites applications from doctors possessing a medical qualification registrable in the United Kingdom who are British subjects and who are under thirty-five years of age.

Medical Officers are appointed in the first instance for general service. But there are ample opportunities for work in special branches of medicine and surgery, in public health and in medical research.

The normal salary scale is from £600 to between £1,000 and £1,120. There are large numbers of super-scale posts to which promotion is made on merit and which carry higher salaries.

Government quarters, in many cases free of rent, and first-class passages to and from the Colonies are provided, and an adequate pension scheme is in force.

Selected candidates are normally required to attend a course of instruction in Tropical Medicine and Hygiene either before proceeding overseas or during their first period of leave.

Further particulars, including the regulations governing admission to the Colonial Medical Service, may be obtained from the Director of Recruitment (Colonial Service), 2, Park-street, London, W.1.

St. Thomas's Hospital, S.E.1.

There is a vacancy for the post of MEDICAL OFFICER IN CHARGE of the RADIOTHERAPEUTIC DEPARTMENT of the Hospital. Salary £850 to £1200 a year, with private practice allowed in the Hospital under certain conditions. The appointment will be for the duration of hostilities, after which it will be advertised with other vacancies on the staff of the Hospital, when the holder of the appointment will be eligible to apply.

Applications may be sent to, and further particulars obtained from, the SECRETARY.

The Hospital for Women,

Soho-square, W.1.

Applications are invited from fully qualified Men and Women for the combined post of RESIDENT MEDICAL OFFICER (B2) and MEDICAL OFFICER to the First-Aid Post, for the period 1st December, 1943, to 31st May, 1944. Salary approximately £150 per annum, with full board and lodging. R and W practitioners holding A posts may also apply.

Applications to reach the undersigned not later than 12th November, 1943. D. C. EMERY, Secretary.

The Princess Mary Maternity Hospital,

Jubilee-road, NEWCASTLE ON TYNE, 1. (90 Beds.)

Applications are invited from registered medical practitioners (Male or Female) for the appointment of RESIDENT OBSTETRIC OFFICER (B1), tenable for one year in the first instance and renewable annually for a maximum period of three years. Salary £150–£250 per annum, according to experience, together with full residential emoluments. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 appointments and rejected by the R.A.M.C., may apply.

The appointment becomes vacant 1st December, 1943, and applications giving full particulars, together with copies of two recent testimonials, should be sent not later than Saturday, 6th November, to: R. S. JOHNSON, House Governor.

City of Birmingham.

BACTERIOLOGICAL LABORATORIES.

Applications are invited from trained technicians (Male or Female) for a temporary appointment in the above laboratories. Candidates should have had good experience in bacteriological and serological procedures, and should possess the Diploma of the Institute of Medical Laboratory Technology or other recognised qualification. Salary (Grade B) £260, rising by £10 annually to £350, according to experience, plus war bonus. The appointment will in the first place be for a period of two years, but during that period subject to one month's notice by either side.

Applications should be received not later than 13th November, 1943, and should be addressed to Dr. F. C. LEWIS, City Bacteriological Laboratories, 150, Great Charles-street, Birmingham, 3.

City of Plymouth.

CITY GENERAL HOSPITAL. (320 Beds.)

Applications are invited from duly qualified and registered medical practitioners, Male and Female, for the post of ASSISTANT MEDICAL OFFICER (B2). Salary will be at the rate of £300 per annum, plus a war bonus, with full residential emoluments. All fees received by the officer must be refunded to the Council. The applicant should have had some previous experience, and the duties will be mainly in the medical side of the Hospital. R and W practitioners holding A posts may also apply, when appointment will be limited to six months; otherwise renewable for a further period of six months terminable by one month's notice on either side.

Further details may be obtained from the Medical Superintendent of the City Hospital, Plymouth.

Applications, stating age, nationality, and experience, together with copies of not more than three recent testimonials, should be sent as soon as possible to—

T. PEIRSON, Medical Officer of Health.

Seven Trees, Lipson-road, Plymouth.

County Borough of Middlesbrough.

MIDDLESBROUGH GENERAL HOSPITAL.

Applications are invited from registered medical practitioners for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER (B2). The salary is at the rate of £270 per annum, together with full residential emoluments. In addition to hospital duties the successful candidate may be required to undertake relief or holiday duties for other whole-time members of the Corporation Medical Staff. The General Hospital contains 353 Beds and is a training school for nurses. The appointment is subject to the rules and regulations of the Middlesbrough Corporation and the successful candidate will be required to pass satisfactorily a medical examination. R practitioners who now hold A posts may apply, when the appointment will be limited to six months; otherwise it will be for a period of twelve months.

Applications, stating age, qualifications, nationality, and particulars of present appointment and experience, accompanied by copies of three recent testimonials, to be sent to the Medical Officer of Health, Municipal Buildings, Middlesbrough, not later than Tuesday, 2nd November, 1943.

PRESTON KITCHEN, Town Clerk.

Municipal Buildings, Middlesbrough, 18th October, 1943.

The Royal Liverpool Children's Hospital,

Myrtle-street, LIVERPOOL, 7.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT CASUALTY OFFICER (B2), now vacant. The salary is at the rate of £250 per annum, with full residential emoluments. R and W practitioners holding A posts may also apply, when appointment will be limited to six months.

Applications, accompanied by copies of three testimonials and the name of a referee, should be sent to the SECRETARY of the Hospital by an early post.

Northampton General Hospital.

(408 Beds.)

Applications are invited immediately from registered medical practitioners, Male or Female, for the post of GYNÆCOLOGICAL AND OBSTETRICAL HOUSE SURGEON (A). Salary at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when the appointment will be for a period of six months.

Applications, stating age, qualifications with dates, and nationality, should be sent as soon as possible to—

GORDON S. STURTRIDGE, Superintendent.

Bootle General Hospital,

LINACRE LANE, BOOTLE, LIVERPOOL.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY OFFICER (A). Salary is at the rate of £150 per annum with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications, with copies of recent testimonials, should be sent as soon as possible to— A. J. COOPER, Superintendent.

Caernarvonshire and Anglesey

INFIRMARY, BANGOR (a General Hospital).

A HOUSE SURGEON (A) and a HOUSE PHYSICIAN (A) wanted. Salaries respectively £160 and £140 per annum, with residence, board, and laundry. Duties to commence as soon as possible. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for six months; otherwise not exceeding one year.

Applications, stating age, qualifications, and nationality, with two testimonials, to be addressed to the SECRETARY.

City of Liverpool.

Applications are invited for the appointment of a Full-time JUNIOR MEDICAL PATHOLOGIST at the ALDER HEY EMERGENCY HOSPITAL (1316 Beds) which also deals with material from the Broadgreen Emergency Hospital (700 Beds). Salary at the rate of £650 per annum (non-resident), together with a cost-of-living bonus amounting, at the present time, to £24 per annum.

Any fees received in connexion with the appointment to be handed over to the City Council.

Candidates must be fully qualified and registered, must have specialised in Pathology, and have had experience in a recognised pathological department.

The officer appointed will be responsible for conducting the work of the laboratory under the general supervision of the pathologist of the Southern Group of Hospitals and will be required to coöperate generally with the medical staffs so far as this particular service is concerned. The appointment will be made in accordance with the Standing Orders of the City Council and will be determinable by three months' notice on either side.

Applications, stating whether R practitioner and whether liable for military service, age, nationality, qualifications with dates, experience, details of previous appointments, and accompanied by copies of three testimonials, should be endorsed "Junior Medical Pathologist" and sent not later than 10 A.M. Tuesday, 9th November, 1943, to: W. H. BAINES, Town Clerk.

Municipal Buildings, Liverpool, 2, October, 1943.

Coventry and Warwickshire Hospital.

APPOINTMENT OF RESIDENT SURGICAL OFFICER (B1).

The post of Resident Surgical Officer having become vacant owing to the present holder having obtained another and more senior hospital appointment, applications are invited for this post, which is vacant on 1st November, 1943. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Applications from male R practitioners now holding A or B2 posts cannot be considered unless they have been rejected by the R.A.M.C. Salary not less than £350 per annum, according to experience and qualifications, together with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent to the HOUSE GOVERNOR AND SECRETARY, Coventry and Warwickshire Hospital, Coventry.

Victoria Hospital, Burnley.

(169 Beds.)

Applications are invited from registered medical practitioners (Male or Female) for the appointments of HOUSE SURGEON (A) and HOUSE PHYSICIAN (A) (both posts now vacant). Salary is at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications, stating age, qualifications with dates, nationality, with copies of recent testimonials, should be sent immediately to: J. E. WHEATCROFT, Secretary.

City of Birmingham.

DUDLEY ROAD AND SELLY OAK HOSPITALS.

Applications are invited from registered medical practitioners, Male and Female, for appointments as JUNIOR MEDICAL OFFICERS (A). The salary is at the rate of £200 per annum, plus residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointments will be for a period of six months; otherwise not exceeding one year.

Applications, stating age, qualifications, nationality, and experience, accompanied by copies of three recent testimonials, should be addressed to the MEDICAL OFFICER OF HEALTH, Public Health Department, Birmingham, 3, not later than the 3rd November, 1943.

Royal Infirmary, Preston.

Applications are invited from registered medical practitioners, Male or Female, for the appointment of HOUSE SURGEON (A) to the EYE AND EAR, NOSE, AND THROAT DEPARTMENT (recognised for D.O.M.S. and D.L.O. examinations). Salary £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent forthwith to—

Royal Infirmary, Preston. JOHN GIBSON, Superintendent.

York County Hospital. (222 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of ORTHOPÆDIC HOUSE SURGEON AND CASUALTY OFFICER (B2). Salary is at the rate of £175 per annum, with full residential emoluments. R and W practitioners holding A posts may also apply, when appointment will be limited to six months.

Applications to be sent by 3rd November, 1943, to—

J. R. MACKRILL, Secretary.

New Sussex Hospital for Women and CHILDREN, Windlesham-road, BRIGHTON.

Applications are invited from registered medical practitioners (Female) for the appointment of HOUSE SURGEON (B2), to commence duties as soon as possible. Salary £150 p.a., with full residential emoluments. W practitioners who now hold A posts may apply, when appointment will be limited to six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned.

PERCY F. SPOONER, Secretary.

Newark Town and District Hospital.

(70 Normal Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A), now vacant. Salary is at the rate of £200 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of six months. B. C. DION, Secretary-Superintendent.

Royal United Hospital, Bath.

Applications are invited from registered medical practitioners (Male) for the appointment of HOUSE SURGEON (A) (Gynæcology and Anæsthetics). Salary £150 p.a., with board, residence, and laundry. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

J. LAWRENCE MEARS, Secretary-Superintendent.

24th September, 1943.

Nottingham General Hospital.

(585 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE PHYSICIAN (A). Duties to commence about 5th November. Salary at the rate of £200 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications to be addressed to the undersigned, stating age, qualifications, experience, &c., together with copies of testimonials. HENRY M. STANLEY, House Governor and Secretary.

Swansea General and Eye Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the following appointments:—

HOUSE PHYSICIAN (A), now vacant. The successful candidate will be required to reside at the Hospital Annexe (120 Beds), be responsible for the care of the patients therein, including both medical and post-operative surgical cases, and attend medical out-patient clinics at the Parent Hospital.

HOUSE SURGEON (A), vacant about 22nd November, 1943.

Salary in both cases at the rate of £150 p.a., with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when appointments will be for a period of six months.

Applications should be forwarded to—

O. C. HOWELLS, Secretary-Superintendent.

22nd October, 1943.

Surrey County Council.

ST. HELIER COUNTY HOSPITAL, CARSHALTON.

(862 Beds.)

Applications are invited from registered medical practitioners (Male and Female) for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (B2). Salary at the rate of £250 p.a., plus full residential emoluments. Duties to be mainly in pædiatric unit (120 Beds). R and W practitioners holding A posts may also apply, when appointment will be limited to six months; otherwise, subject to one month's notice on either side, not exceeding one year.

Apply to MEDICAL SUPERINTENDENT by 10th November, 1943.

Rotherham Hospital.

(General Voluntary Hospital—140 Beds.)

Applications are invited from registered medical practitioners for the appointment of HOUSE PHYSICIAN (A), vacant 22nd November. Salary £200 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when the appointment will be for six months.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of recent testimonials, should be sent at once to the SECRETARY-SUPERINTENDENT.

Princess Elizabeth Orthopædic Hospital

BUCKERELL BORE, EXETER.

(E.M.S. Fracture and Orthopædic Centre 1A. 150 Beds with Annexe.)

Applications are invited from registered medical practitioners, including practitioners within three months of qualification and liable under the National Service Acts, for the post of HOUSE SURGEON (A). Salary £200 per annum, with board, residence, and laundry. The appointment is for six months.

Applications to: P. MELHUISH, Secretary.

Bradford Royal Infirmary.

RESIDENT MEDICAL OFFICER AND ASSISTANT PATHOLOGIST (B1) (Male, single) required on 1st January, 1944. Twelve months' appointment. Salary £250 per annum, with board, residence, and laundry. There are 115 Medical Beds and two House Physicians. The successful applicant will be required to act as Assistant to the Pathologist. Suitably qualified R practitioners holding B2 appointments, also those holding B1 and rejected by the R.A.M.C., may apply.

Applications, stating age, nationality, qualifications, and previous experience, with copies of not more than three recent testimonials, should be received by the undersigned not later than 9th November, 1943. H. TRUSSON,

13th October, 1943. House Governor and Secretary.

Bradford Royal Infirmary.

Applications are invited from registered medical practitioners (Male, single) for the appointment of HOUSE PHYSICIAN (A), vacant 1st December, 1943. Six months' appointment. Salary £150 per annum, with full residential emoluments.

There are 345 Beds and 8 Resident Officers. Practitioners within three months of qualification and liable under the National Service Acts may also apply.

Applications, stating age, nationality, qualifications, and previous experience, with copies of three recent testimonials, should be sent immediately to—

H. TRUSSON, House Governor and Secretary.

County Council of the West Riding of YORKSHIRE.

SCALEBOR PARK MENTAL HOSPITAL, Near LEEDS.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of TEMPORARY RESIDENT ASSISTANT MEDICAL OFFICER (B1), vacant shortly. Applicants should have had experience in a mental hospital. Salary £500 per annum, plus board, residence, &c., valued at £120 per annum. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 appointments and rejected by the R.A.M.C., may apply. Married quarters are not provided.

Forms of application may be obtained from the undersigned, by whom they must be received not later than 16th November, 1943. BERNARD KENYON, Clerk to the Visiting Committee.

County Hall, Wakefield.

General Hospital, Nottingham.

EAR, NOSE, AND THROAT DEPARTMENT (40 Beds) and large Out-patient Department.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A) for the above department. Salary at the rate of £200 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications to be addressed to the undersigned, stating age, qualifications, experience, &c., together with copies of testimonials. HENRY M. STANLEY, House Governor and Secretary.

Nottingham General Hospital.

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A). Salary is at the rate of £200 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of six months.

Applications to be addressed to—

HENRY M. STANLEY, House Governor and Secretary.

Birmingham United Hospital.

THE GENERAL HOSPITAL.
THE QUEEN ELIZABETH HOSPITAL.
(Also incorporating THE QUEEN'S HOSPITAL, 1840–1941).

Applications are invited for the post of RESIDENT ANÆSTHETIC REGISTRAR (B1), now vacant. Applicants should possess the Diploma in Anæsthetics, or should be in a position to take the examination. Salary is at the rate of £350 per annum. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 appointments and rejected by the R.A.M.C., may apply.

Applications, stating age, qualifications, experience, nationality, and present post, together with copies of three recent testimonials, should be sent at once to—

G. HURFORD, Secretary, Birmingham United Hospital.

The Queen Elizabeth Hospital, Birmingham, 15.

Victoria Hospital for Sick Children, HULL (Incorporated).

The Board of the above Hospital requires RESIDENT HOUSE SURGEON (A), Lady, at a salary of £200 per annum, with board, residence, and laundry. Practitioners within three months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of six months.

Applications to be sent to the SECRETARY as soon as possible.

Birmingham Accident Hospital and REHABILITATION CENTRE.

Applications are invited from registered medical practitioners for the following appointments :—

RESIDENT SURGICAL OFFICER (B1). Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Salary is at the rate of £300 per annum. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 appointments and rejected by the R.A.M.C., may apply.

HOUSE SURGEON (B2). Salary is at the rate of £150 per annum, with full residential emoluments. R and W practitioners who now hold A posts may apply.

Both appointments become vacant 1st December and are for a period of six months. A. A. MACIVER, Secretary.

Bath-row, Birmingham, 15, 11th October, 1943.

The Royal Hospital, Wolverhampton.

(Incorporated under Royal Charter.) (310 Beds.)

Applications are invited from registered medical practitioners for the following appointments, vacant 31st October :—

RESIDENT ANÆSTHETIST (B2). Salary is at the rate of £200 per annum, with full residential emoluments. R and W practitioners holding A posts may apply, when appointment will be limited to six months; otherwise for a period of twelve months.

HOUSE SURGEON (A). Salary is at the rate of £100 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of six months.

13th October, 1943. W. COCKBURN, House Governor.

Cefn Coed Hospital, Swansea.

SWANSEA COUNTY BOROUGH MENTAL HOSPITAL.
(600 Beds.)

Required, TEMPORARY (War-time) DEPUTY MEDICAL SUPERINTENDENT (B1), Male or Female. Age not to exceed sixty years. Salary £620 per annum, with apartments, board, laundry, &c., valued at £130 per annum. Previous general psychiatric experience essential, and experience of modern forms of treatment. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 appointments and rejected by the R.A.M.C., may apply.

Applications from those who have already retired or are about to retire on pension from a public mental hospital will be favourably considered.

Applications, with names of persons to whom reference may be made, should be sent to the MEDICAL SUPERINTENDENT as soon as possible.

Ipswich County Borough Council.

BOROUGH GENERAL HOSPITAL. (Normal Beds 252.)

Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1), now vacant. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Salary is at the rate of £500 per annum, with full residential emoluments, and the appointment is subject to one month's notice on either side. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 appointments and rejected by the R.A.M.C., may apply.

Applications, stating details of previous appointments, should be sent at once to the Medical Officer of Health, Elm-street, Ipswich.

Town Hall, Ipswich. A. MOFFAT, Town Clerk.

Norwich City Council.

WOODLANDS HOSPITAL. (311 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER (B2), now vacant. The salary is at the rate of £250 per annum, with full residential emoluments. R and W practitioners who now hold A posts may apply, when appointment will be limited to six months; otherwise it will be for a period of one year.

Further particulars of appointment to be obtained from the Senior Medical Officer, Woodlands Hospital, Bowthorpe-road, Norwich, and to whom applications should be sent.

City Hall, Norwich. BERNARD D. STOREY, Town Clerk.

Salisbury General Infirmary.

(Voluntary Hospital—225 Beds.)

Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A), now vacant. Salary is at the rate of £150 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of six months.

Applications, stating age, nationality, and full particulars, together with copies of recent testimonials, to be sent at once to : JOHN WILLIAMS, Superintendent and Secretary.

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Cheltenham, Gloucester and County
CHILD GUIDANCE CLINIC.

Applications are invited from registered medical practitioners for the appointment of MEDICAL DIRECTOR of the Cheltenham and County Child Guidance Clinic, which is administered by a Joint Committee of the Gloucestershire County Council, the Gloucester City Council and the Cheltenham Borough Council.

Applicants should be specially experienced in Psychiatry, particularly in the psychiatric treatment of children, and be thoroughly conversant with the conduct of Child Guidance Clinics. They should not be liable to Military Service.

The salary will be £500 per annum, and opportunity will be afforded to engage in consulting private practice.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and to the candidate passing the necessary medical examination.

Forms of application and further particulars of the appointment may be obtained from the SECRETARY FOR EDUCATION, Shire Hall, Gloucester, to whom applications, with copies of three recent testimonials, should be sent not later than 15th November, 1943.

GUY H. DAVIS,
Clerk of the Gloucestershire County Council.

West Riding County Council.

Applications are invited from qualified Women for appointment as Assistant SUPERVISOR OF SCHOOL MEALS. The duties will be mainly connected with the provision of meals at School Canteens and other educational institutions, and the person appointed will be required to advise on questions of diet, staffing, equipment, and general organisation. Candidates should have experience in large-scale catering and expert knowledge of dietetics. An appropriate degree and experience of administration and organisation will be a recommendation. Salary £300–£15–£400. The post is pensionable.

This advertisement is permitted by the Ministry of Labour and National Service under the Employment of Women (Control of Engagement) Order, 1943, who have agreed that women born in 1910 or earlier, possessing the requisite training and/or experience, may apply for this post.

Application forms, with further particulars and conditions of appointment, to be obtained from the EDUCATION OFFICER, County Hall, Wakefield. Last date for applications, 20th November, 1943.

Norfolk and Norwich Hospital,
NORWICH.

Applications are invited from registered medical practitioners for the appointment of HOUSE SURGEON (A). Salary is at the rate of £170 per annum, with full residential emoluments. Practitioners within three months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of six months.

Applications to be addressed to—
FRANK INCH, House Governor and Secretary.

East Suffolk and Ipswich Hospital,
IPSWICH. (400 Beds—7 Residents.)

Applications are invited for the following posts:—

HOUSE SURGEON (A), vacant 9th December, from registered medical practitioners, including those within three months of qualification and liable under the National Service Acts.

HOUSE SURGEON (B2), vacant 15th November, from registered medical practitioners, including R and W practitioners who now hold A posts.

Appointments will be for six months. Salary for both posts is at the rate of £175 per annum, with full residential emoluments.

Apply: ARTHUR GRIFFITHS, Secretary.
The Hospital, Ipswich, 30th October, 1943.

Manchester Royal Infirmary.

Applications are invited from registered medical practitioners, Male and Female, including practitioners within three months of qualification and liable under the National Service Acts, for the appointment of HOUSE SURGEON (A) to the NEURO-SURGICAL DEPARTMENT, now vacant. The appointment is for six months, with salary at the rate of £75 per annum and the usual residential emoluments.

Applications to be sent at once to the Chairman of the Medical Board. By order, F. J. CABLE,
21st October, 1943. General Superintendent and Secretary.

Scarborough Hospital, Yorkshire.
(Normally 140 Beds.)

Applications are invited from Female registered medical practitioners for the post of HOUSE SURGEON (A). The appointment is for six months commencing immediately, and the salary is at the rate of £175 per annum, with board, residence, laundry, etc. Practitioners within three months of qualification and liable under the National Service Acts may also apply.

Applications, with age, testimonials, qualifications, etc., to be sent immediately to the SECRETARY.

Royal Sheffield Infirmary and Hospital.

Applications are invited for the post of BIOCHEMIST. The appointment is a temporary one and is open to those not medically qualified. The salary will be from £300 to £400 per annum, non-resident, according to experience, and the selected candidate should be prepared to start without delay.

Applications to SECRETARY, at The Royal Hospital, West-street, Sheffield, 1.

Victoria Hospital, Accrington.

Applications are invited from medical practitioners (Male) for the appointment of HOUSE SURGEON (B2). The salary is at the rate of £200 per annum, with full residential emoluments. R practitioners holding A posts may also apply, when appointment will be limited to six months.

Apply, with copies of two testimonials, to—
HONORARY SECRETARY.

His Majesty's Colonial Service.
COLONIAL MEDICAL SERVICE.

A vacancy exists for a PATHOLOGIST at the MULAGO MEDICAL SCHOOL, UGANDA. Candidates must be British subjects of under thirty-five years of age, possess a medical qualification registrable in the United Kingdom, and have had experience in teaching pathology and forensic medicine at university standard. The salary is on the scale £600 per annum, rising by annual increments of £30 to £840 per annum, then by annual increments of £40 to £1000 per annum. An initial salary above the minimum may be offered. Free quarters or an allowance in lieu are provided. Free passages are provided but it is unlikely that the selected officer's wife could join her husband in Uganda during the war. The appointment is pensionable but the selected candidate will be required to serve for two years on probation.

Further particulars and forms of application may be obtained from the DIRECTOR OF RECRUITMENT (Colonial Service), 2, Park-street, London, W.1.

Long-period Locum required for Shropshire. Salary £650 per annum, all found, car supplied. —Write, A. SHAW, Medical Agent, Premier Buildings, 88, Church-street, Liverpool, 1.

Doctors, Male and Female, required for Locums and Assistantships. Good salaries paid. Vacancies for Ships' Surgeons.—Write, A. SHAW, Medical Agent, Premier Buildings, 88, Church-street, Liverpool, 1.

Assistant wanted in the Biochemical DEPARTMENT of DUDLEY ROAD HOSPITAL for war duration. Candidate with experience of hospital biochemistry preferred. Salary according to qualifications and experience.

Applications to be sent to the MEDICAL SUPERINTENDENT, Dudley Road Hospital, Birmingham.

Wanted, Assistant, or Assistant with view, in large Practice in Midland Industrial City, or Panel (2300) for Sale.—Address, No. 351, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Assistantship in Four-partner Practice with death vacancy. In county town 30 miles London. Small easily run house, unfurnished, available. Age limit sixty, but partnership considered in case of younger man. Salary according to age and capacity. Housekeeper available.—Address, No. 353, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Lady Typist required. State Salary. —UNIVERSITY EXAMINATION POSTAL INSTITUTION, 17, Red Lion-square, W.C.1.

Experienced Practitioner, about to relinquish large practice, requires Part-time Appointment London district. Clinical, administrative, or trustee work preferred. Good credentials.—Address, No. 354, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Medical Practices and Partnerships for disposal, also Dental Practices and Nursing Homes. All classes of Insurance transacted.—Write, A. SHAW, Medical Agent, Premier Buildings, 88, Church-street, Liverpool, 1.

Medical Practices and Nursing Homes sold—Partnerships arranged—Valuations, Reports, &c.—Over 25 years' experience.—SONGHURST & RICKARD, Valuers and Surveyors, Guildhall Chambers, Exeter.

Medical Typist undertakes Theses, Tables, applications for Hospital Posts, 2s. 6d. per 1000 words.—JEPSON, 32, Alexandra-road, Hampstead, N.W.8.

For Sale, to essential user, Doctor's Austin 10, December, 1941, mileage 20,000. One owner. South Dorset. Best offer.—Address, No. 352, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Financial Assistance can be arranged for the purchase of Medical Practices and Partnerships.—Write, A. SHAW, Medical Agent, Premier Buildings, 88, Church-street, Liverpool, 1.

Urgent Case.—New or Second-hand "Dunlopillo" Mattress required.—Address, No. 348, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Wanted—£20, or agreed price, offered for good pair BINOCULARS, Goerz, Leitz, or Zeiss, or good Terrestrial Telescope.—Dr. BLISS, Corbett Hospital, Stourbridge, Worcs.

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